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THE PRINCIPLE OF COMPARATIVE ADVANTAGE APPLIED TO FARM MANAGEMENT STUDIES OF REGIONAL COMPETITION BETWEEN FARMERS

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Competition between farmers in supplying the same market is in many ways similar to the problem of international competition in supplying a given market. Both cases may be resolved into a consideration of the question of division of labor and a comparison of the relative advantages which particular groups possess in carrying on different lines of production. Because of the similarity in the fundamental nature of the problem it may be instructive to consider the "principle of comparative advantage" which is given so much attention by writers on international trade, with a view to seeing if the same or a similar principle may be applied to the problem of regional competition between farmers.

As stated by Taussig, [2] the principle of comparative advantage is "that a country tends, under conditions of freedom, to devote its labor and capital to those industries in which they work to greatest effect. It will be found unprofitable to turn to industries in which, though labor and capital may be employed with effect, they are applied with

[1] The writer is indebted to Mr. H. R. Tolley, of the Bureau of Agricultural Economics, for valuable suggestions in the preparation of this article.

[2] *Some Aspects of the Tariff Question*, 2nd Edition, p. 30.

less effect than in the more advantageous industries." *Relative* or *comparative,* not absolute advantage is emphasized. "From the principle of comparative advantage, it follows that a country may fail to produce things which at first sight one would expect it to produce with benefit. *It may import things in which its labor is more effective than is labor in the country whence they came.* * * * Labor in the United States is no less productive in growing hemp than labor in Russia; it is probably more so; none the less hemp is imported from that country. * * * Coarse wool, such as is used in making carpets, could be grown here with as little labor as in China, Asia Minor, Russia and sundry other backward countries, from which, none the less, it is steadily imported. The every-day explanation of all these phenomena is that labor is too dear in the United States. * * * The real explanation of the continued importation of things in which labor is at no disadvantage, is that they cannot meet the pace set by those in which the labor of the country is more productively applied." [3]

This doctrine of comparative advantage as stated by Taussig was presented in its principal features by Mill and other earlier writers as a doctrine of *comparative costs.* The significance of this difference in terminology with all that it suggests as to method of approach to the problem will be apparent as we consider the application of this principle to the question of regional competion between farmers.

In considering the problem of selecting the lines of production to be carried on in a given farming region it is sometimes maintained that no satisfactory solution of this problem can be reached until a careful comparison of production costs in competing regions is made. Those who advance this kind of an argument usually have in mind money costs, although if pressed for details as to the way in which this information is to be used, the dollars and cents costs

[3] Taussig, *Principles of Economics,* Vol. 1, p. 487-8. A full treatment of this subject is found in J. D. Black's *Introduction to Production Economics,* Vol. I, Ch. VI, preliminary edition, 1925. It should be noted that our tariff law now requires studies of differences in absolute costs in this and competing countries. These studies ignore the principle of comparative advantage which underlies the whole economic basis of international trade.

are often abandoned for costs expressed so far as possible in physical quantities such as hours of man labor, horse work, and so forth, together with a consideration of the cost rates on these items.

Nevertheless, the implication is that, once the farmer knows how his production costs compare with those of farmers in other areas, he will be able to select from the possible lines of production those which he can carry on to advantage in competition with other producing regions. It can be readily admitted that it might and probably would throw some light upon the question although it is not the proper approach to this particular problem. This is not the proper approach to the problem because a farm commodity is ordinarily not produced entirely or even primarily where it could be produced at least cost. It has been pointed out, for example,[4] that sugar beets could be grown as satisfactorily, if not more so, in the heart of the Corn Belt than in the sugar beet areas of Michigan or Colorado. They are not grown to any appreciable extent in competition with corn for the simple reason that corn growing is more profitable and this because the area peculiarly suited to corn production is relatively much smaller than the area suited to sugar beet culture. The farmers of a region should determine their production program by selecting those lines of production which, when combined into a system of farming, will give a more profitable system than any other which could be selected and they should do this not by comparing their production costs with those of other areas but by direct approach to the question, what combination of farm enterprises will yield the largest total net returns for the farming resources at hand?

The first and most obvious objection to attempting to solve this problem by a study of comparative production costs is that farming under ordinary circumstances is carried on under conditions involving many joint costs and large fixed charges. It is necessary to place more or less arbitrary valuations on many cost factors. The result is that the consequent money costs are subject to all the inter-

[4] See article by Dr. H. C. Taylor on "Sugar Beet Culture in the United States"—*Annals of the American Academy of Political and Social Sciences.* Vol. XXII, p. 179 (1903).

pretative modifications necessary because of the arbitrary assumptions involved in the allocation of joint costs and in the valuation of many of the elements of costs for which rates are not readily available.

But brushing aside these apparently insuperable difficulties from a practical point of view, there remains the further objection that, even if it were possible to secure satisfactory cost data for comparative purposes, this would not constitute a sound or logical approach to the problem as to whether a particular line of production or system of farming would be the most profitable in the region or regions being studied. To take a specific example, a farmer in Massachusetts cannot decide whether he can afford to produce apples by comparing his cost of producing apples with that of producers in New York or Washington (taking into account the factor of transportation costs as well) who are competing with him for the market for his apples. What he has to decide is whether the production of apples either as a supplementary enterprise or as a major line of production is one element in a system of farming which will enable him to obtain a more profitable utilization of his farming resources than he could obtain by any other combination of enterprises not including apples. To put it another way, the farmer must survey the various possible alternative combinations of enterprises which are most likely to prove to be profitable and select the combination which, all factors considered, promises the greatest continuous profit for the period of operation being considered. The length of the period involved makes this a more difficult problem for one who contemplates building a new dairy barn or starting an orchard than for one who is considering how many acres of potatoes to plant next year.

Some of this confusion as to the proper basis upon which farmers may decide what to produce is due to a failure to distinguish between important decisions which farmers have to make. At least three questions are often involved in this confusion and may be stated as follows:

1. What is the most profitable system of farming (usually involving a combination of enterprises) which can be carried on in an area?

2. What are the most effective ways of carrying on the several lines of production which constitute this farming system?

3. Will even this most profitable farming system return the farmers of the region an income sufficient to enable them to continue in the business and maintain a satisfactory standard of life?

In considering Question 1, it should be recognized that in the last analysis this must be answered separately for each farm in the area, taking into account the peculiarities found on these farms and the individual aptitudes of the farmers. The answer for the region is the sum total of all the answers for individual farms as to what system of farming will prove most profitable. Furthermore these questions cannot be considered as entirely separate by the farmer or the research worker. A farmer's answer to the first question will depend to a considerable extent upon the effectiveness with which he can carry on the particular enterprises and hence involves the second question. However, these interrelationships do not prevent the careful research worker from differentiating the interrelated phases of the problem involved so as to center the major effort upon the primary objective of a particular study.

In considering the problem of regional competition between farmers, Question 1 as to the most profitable farming system which can be carried on in a given farming area is most important. It is the object of the remainder of this discussion to point out the lines along which a well-reasoned approach to this problem may be worked out; and how, in such an approach, the factor of regional competition would be considered. The answer to this question involves two sets of factors which, for purposes of exposition, may be called internal influences, or those concerned primarily with the conditions on a particular farm, and external influences or factors which are ordinarily outside of the individual farmer's power of control. The internal factors determine in a fairly definite manner the effectiveness, viewed from a physical or quantitative standpoint, with which different enterprises or combinations of enterprises may be carried on.

A description of these factors would include (1) a careful enumeration of the farmer's productive resources, land (including fertility and responsiveness to fertilizers), labor, and equipment; information as to the quantitative and chronological requirements of each product in terms of man hours, horse hours, equipment hours, pounds of grain and hay, acres of pasture, and so forth—in short, a thorough knowledge of the production requirements of different schemes of farming including cultural and feeding practices. It would include also (2) a consideration of the personal factor involved in determining the most profitable farming system and methods for particular farmers. Farmers differ as to managerial ability and in their training and fitness for carrying on the various lines of farming. These differences must be taken into account.

The external factors are, in the main, price factors and the weather. The weather factor is responsible for large year-to-year variations in yields, and crops must be selected on the basis of average yields over a period of years. The price factors include on the one hand the prices which the farmer gets or expects to get for each of his products and on the other hand the prices which he must pay for all direct cash costs involved in the operation of the farm business, such as cost of seed, twine, threshing, purchased feed, hired labor, etc. A careful consideration of these two sets of factors, internal and external, will enable one to make an approximate budget of receipts and expenses for different combinations of farm enterprises with a view to finding out which combination is likely to prove most remunerative for the resources at hand.[5]

This budgeting or estimation of receipts and expenses is of necessity based upon future and therefore unknown prices. And it is just at this point that the question of regional competition among farmers comes in for consideration. The prices which farmers of a given region may expect to get for their products will depend in a large measure upon the quantities of those products supplied from that and competing areas. Prospective demand must

[5] For a further development of this point the reader is referred to Part III of *Bulletin 205* of the Minnesota Experiment Station by Pond and Tapp, or a similar treatment in *United States Department of Agriculture Bulletin 1296* by Grimes, Hodges, Nichols, and Tapp. See also Taylor, H. C. *Outlines of Agriculture Economics*, Chapter IV.

also be considered, but the important thing from the standpoint of competition between regions is the effect which future supplies from all the areas supplying a common market will have upon the price. It is through the reduction of prices that the competition will become effective.

And here it is, it seems to me, that regional farm management studies must be linked up with broader studies of price trends and particularly with studies of trends in production in competing areas and of the factors which are most likely to determine those trends in the future rather than with studies of production costs in competing areas. A farmer in a particular area must concern himself with the most probable future developments as to the production of his products by farmers in other areas, not with a comparison of *past* production costs in the different areas.

Ultimately, a reasoned solution of the problem for a particular region or farm can be found only by considering the reduction in the price of a particular commodity relative to others which will be necessary before a change to some other combination of enterprises will prove more profitable than a continuation of the combination being carried on. This involves, of course, a consideration of both the internal and external factors in budgeting receipts and expenses as outlined above. In taking into account the factor of competition from other areas, the best possible estimate must be made of the effect of this competition upon prices during the period under consideration. This will be, at best, only a forecast or approximation, but inasmuch as farmers are continuously faced with the problem of making such forecasts and usually make them upon a most meager consideration of the factors involved, it is incumbent upon farm management investigators to consider this phase of the problem.

The argument thus far may be summarized as follows: The farmers of a region, like a nation, should devote their efforts to those lines of production in which they have the greatest comparative advantage taking into account both physical and economic factors. The question of chief concern in connection with regional competition between farmers is one as to the most profitable scheme of farming which can be carried on in a given region. The answer to this

question depends upon a combination of internal and external factors, the latter including the prices received by the farmer for his products and hence influenced by the production of those products in competitive areas. The most important factors to be considered in connection with this influence of production in competing areas are those factors which will determine the future course of production in those areas.

If the foregoing reasoning on the question of comparing farm costs in competing areas is, in its principal features, sound, it may be worth while to inquire into the reasons for the popularity of the idea that a direct comparison between the production costs in different regions is needed for answering the question as to what to produce in a given region. Three important reasons suggest themselves to the writer.

First, comparative costs of production have often had a prominent place in the explanations offered by students of agricultural history for the systems of farming developed by the settlers in new parts of the country and the changes that have taken place in older regions. For example, as the farmers of the first half of the nineteenth century moved into the fertile areas of the Middle West they produced large quantities of grain and livestock and sent them east and south. The Eastern farmers on much poorer soil either moved to the West themselves, became factory workers in the East or, as many as could do so profitably, turned to other lines of farming for which their location near consuming centers made them peculiarly fitted.

Other illustrations of this can be found in many incidents in our agricultural history and the usual interpretation given is that the farmers in the older areas because of inability to meet the reduced production costs of the newer areas were forced either to abandon their farms or to turn to other lines of production. The interpretation from the point of view of the principle of comparative advantage is that with the development of the new lands of the West the farmers of the older areas who wished to continue the more extensive types of livestock and grain farming found it more profitable to move to the newer areas where the conditions for this type of farming were most favorable.

Those who preferred to remain in the older areas, on the other hand, found it more profitable either to turn to those lines of farming for which these areas were best suited, dairying, vegetable growing and the like, or to turn to other occupations.

A second reason is found in the fact that (1) ease of production, (2) accountant's estimated cost of production, and (3) profitableness of production in the true economic sense are frequently confused. It is a matter of common observation that there are wide differences in the economic and physical conditions under which almost every farming enterprise is carried on in different regions and that a commodity is obviously produced more easily in some places than in others. However, ease of production from a purely technical or physical standpoint is only one of the factors to be considered in deciding what to produce, and the fact that a thing can be grown more easily in one place than in another does not mean that it should be produced there exclusively or even at all.

Neither can the accountant's estimated cost of production be taken as a satisfactory criterion of what to produce in a given region. Many commodities can be produced to advantage as side lines or supplementary enterprises in regions where conditions are not the most favorable for their production. The usual methods of cost estimation do not take into account the complementary and supplementary relations involved in the selection of farm enterprises. For example, decision as to whether a commodity can be produced profitably as a side-line should be based upon a comparison of its possibilities with that of other side-lines fitting in the business in a similar place, rather than on a comparison of its cost of production with the cost of the same commodity in competing areas.

Taking the farm as a "going concern" the farmer must view his farming resources—land, buildings, equipment, and to some extent the farm family and regular labor supply as, for the time being, fixed resources and select his various enterprises with a view to making the most profitable utilization of these resources. In the case of the major enterprise in a system of farming there is frequently the failure to realize that most regional cost comparisons will

be invalidated by the fact that one of the larger elements in the estimated cost of farm products—land rent (and to some extent returns for other fixed resources)—is dependent in the main upon the price of the principal product or products grown and except for the lag in the adjustment of enterprises serves as an equalizer of costs. Tobacco at 15 cents a pound may not enable a Connecticut Valley tobacco grower to net 5 per cent on his investment in land, but if it will net him 4 per cent, whereas potatoes or any other alternative will only net him 2 per cent, there is little doubt as to what his choice should be. Viewed in this way, the best which a farmer can do is to utilize the land which he owns so as to make it yield the largest return possible and if it is being so used and the return fails to justify the initial investment or estimated valuation [6] the only recourse is either to sell it to some one for more than it is worth for farming, or mark down the value to a point where it will return a reasonable rate of return.

The desire on the part of many people to express the effect of a variety of factors in a single summary figure is a third and most important reason for the popularity of the idea of comparing production costs in competing regions. Back of the summary cost figures there are usually many elements which when properly interpreted have a distinct bearing upon the problem of production trends in competing areas. It is the future course of production in competing areas which is most important and many of the factors which influence costs are also going to influence the future trend of production. Hence a careful consideration of such factors as per-acre yields, quality of product, labor and material requirements per acre and per unit of product, and particularly of trends in alternative lines of production or types of farming which have been or may be introduced, will throw much light upon the problem. This attempt to express the result of as many of these facts as possible in some sort of summary cost figure too often diverts the attention from the more fundamental although more commonplace factors.

[6] Here, of course, it is necessary to consider probable returns over a long period of years.

CATTLE TRAILS AS A FACTOR IN THE DEVELOPMENT OF LIVESTOCK MARKETING

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Cattle droving has played a very important part in the development of American livestock marketing. Its history may conveniently be divided into the following three periods: (1) the Colonial and early national period up to about 1820, (2) the time of the Ohio droving from about 1820 to the Civil War, and (3) the heyday of the Texas cattle trails from the Civil War to the middle nineties, over which has been cast much glamour in song and story. This heyday is the first of the three chapters in the modern story of the cattleman in America. The first chapter, covering the cattle trail period, which is to be discussed in detail in this present article, is romantic, colorful, a-thrill with high adventure and stirring experience. The second chapter deals with a period devoid of high lights in its action, but blazing with financial glory at the end. The third chapter has for its subject a drab, distressful time, but one now finally coming under brighter skies. This whole modern story of the cattle industry covers six decades, or two generations.

The valley of Virginia, the western highlands of the Carolinas, and parts of Georgia were the original cattle ranges of the eighteenth century. Cattle were concentrated at "cow-pens," which were rough, noisy, frontier settlements, often developing into towns like the later cow-towns of the Western ranges. Cattle from these regions were driven to Charleston, Norfolk, Baltimore, and Philadelphia. In like manner, cattle from the country surrounding markets like New York and Boston were driven in along well-defined routes. For example, Boston was the largest live cattle market in New England, getting most of its supplies after the War of Independence from New Hampshire and Vermont.

A new era in American agricultural history opened after 1783, the most important feature of which was the agrarian migration and the shifting of the center of livestock raising to the Ohio Valley. However, the big consuming centers were

still the cities of the East, and it was necessary to develop routes for driving livestock to these markets. Drovers who took cattle across the Alleghanies also drove large numbers of hogs to Eastern centers. This droving from the Ohio Valley was begun about 1810, with cattle marketed by George Renick. Development continued until the hogs annually driven East during the twenties ran as high as 100,000 in a year. The rise and decline of Ohio droving is a short but interesting chapter in the history of the new West. From Ohio there were three principal routes: first, the north road by way of Erie, Pennsylvania, and Dunkirk, New York, and thence down the Mohawk River Valley, until the construction of the Erie Canal in 1825; second, the road crossing the Ohio River by ferry at Wellsville and leading to Philadelphia via Pittsburgh; and third, the more southern road following the old Zane's trail—Zanesville to Wheeling—and thence either through Bedford, Pa., to Philadelphia or through Cumberland, Md., to Baltimore. These three routes are practically the same as those of the New York Central, the Pennsylvania, and the Baltimore and Ohio railroads today.

The last period of cattle droving was the greatest, namely, that of the Texas cattle trails which began about 1868 and lasted for some twenty years. From 1867 to 1895 there were 9,800,000 cattle and 1,300,000 horses driven from Texas to the Northern markets. But it must be noted at the outset that there were two types of trails. The first type included all trails to the northeast to the railroad lines in Kansas and Missouri leading to Eastern markets. The second type, which developed a little later, included the trails which ran northwest to the ranges of Colorado, Wyoming, and Montana for maturing, preliminary to shipment east to the central markets. In 1860 Texas was the chief producer of livestock in the Western states. Indeed cattle increased so rapidly that by the Civil War there was embarrassment of riches, for the war cut off the Northern markets for Texas cattle which were reached by water routes, and prices went down to $4 a head. Up to this time driving northward had not been much practiced, and it was only in 1865 and 1866 that ranch owners decided to try it, and they had the decisive voice in any large movement that was to be undertaken.

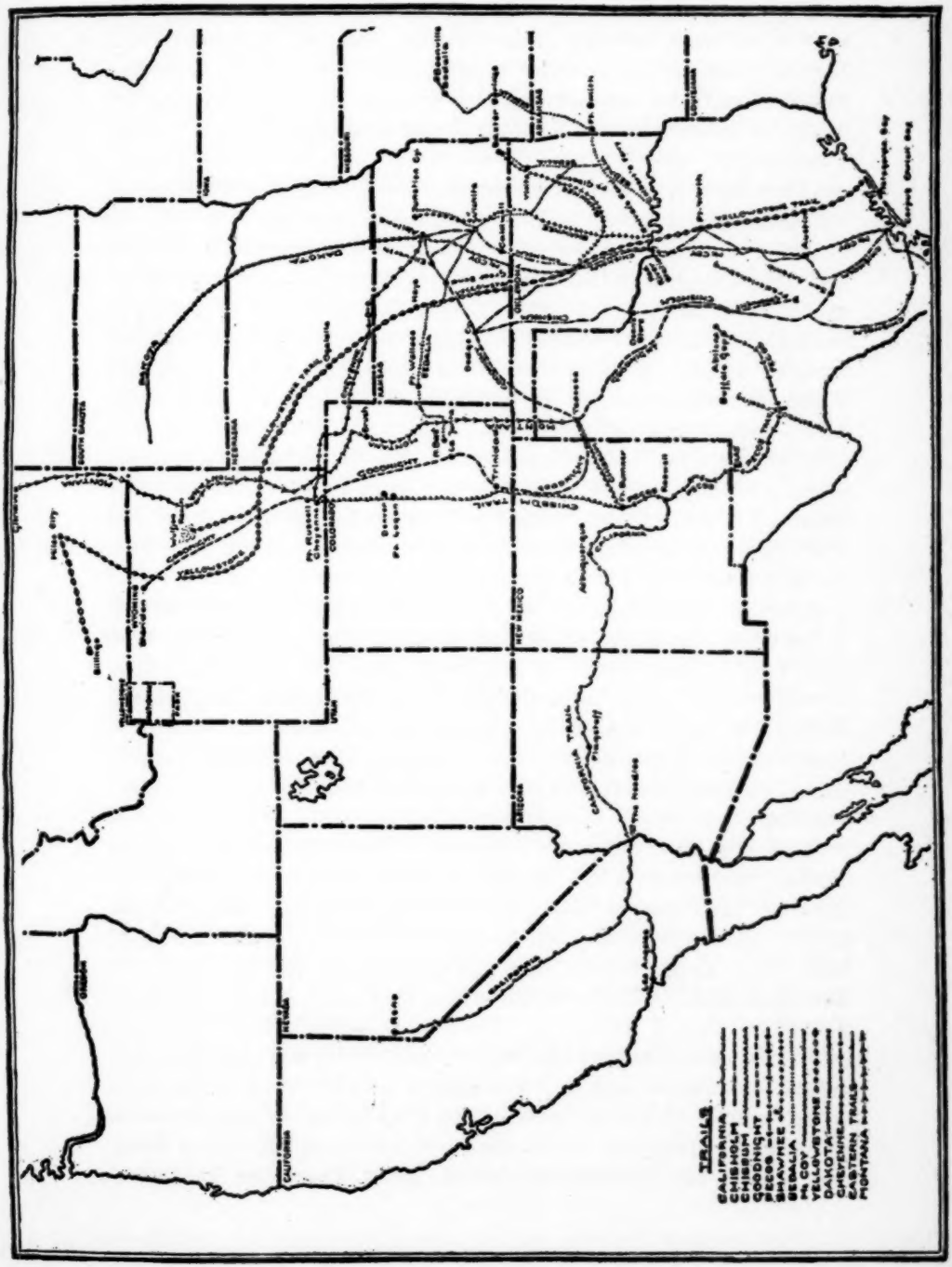
The development of the famous cattle trails to the wide Northwest after the Civil War by the Texas cowboys is one of the great expansive movements of America, to be compared with the landing of the Pilgrims and other settlers up and down the Atlantic coast. Wherever the cowboys went they were the forerunners of civilization and bore with them the bases of the laws and customs of the states of the Northwest—Wyoming, Montana, Oregon, and others up to the Canadian border. Fortune seekers went West in the gold rushes, but they left no constructive impress on the country. If they found a fortune they returned home, if they did not they stayed on, broke, or moved as derelicts from place to place. The cowboys, on the other hand, moved back and forth over the trails, many settling in the great Northwest, intermingling with the westward moving Northerners after the war, and giving the country a new race of constructive, upright citizens. This contribution proved to be a great gift to American civilization.

The Texas cattlemen established a new principle in American livestock growing, for they demonstrated how areas of surplus production could develop and function thousands of miles from the centers of consumption. During the Civil War most of these pioneer ranchmen were enlisted in the army of the Confederacy. When they returned to their frontier homes at the end of the war, they found that their small droves of cattle, which formerly had been raised to supply a local demand, had increased to such immense proportions that they rivaled the buffaloes themselves in number. Throughout the four years of the war, the homes of the Texas settlers sheltered only old men, women and children, and negro servants. Consequently in the absence of herders, the cattle roamed south Texas at will over an ideal habitat of rolling prairie covered by tall, lush grasses and watered by limpid, timber-fringed streams. And they multiplied in abundance. The ragged veterans of the "Lost Cause" courageously set about the task of rehabilitating their neglected fortunes. Land was free for the asking. Who wanted to be bothered with the cares of ownership when he might use countless thousands of acres unbidden? Cattle he possessed galore. The question was how to gather them all and what to do with them once he had them gathered.

Until this time the Texas cow-man was hardly a distinct type. He was mainly a Southern pioneer; yet every state in the Union, Canada, the British Isles, Germany, France, Spain, Mexico, and other countries were represented among the citizenry of the Lone Star State, all slightly tinctured by the customs of the Spanish. The economic problems these men faced started them through a process of molding that left them with a craft, a vernacular, and a character distinctly their own.

Until railroads crossed the Missouri River in 1866 the range country was confined to the far Southwest. On the Texas plains, the nursery of early production, great herds roamed, with the problem of marketing unsolved. Shipment down the Red River to New Orleans or on Gulf vessels to Cuba furnished a precarious outlet. Then, when the iron rails had been pushed 165 miles west of Kansas City to Abilene, in Central Kansas, a new era began. In the summer of 1866, some 270,000 head of cattle were concentrated in the northeast of Texas for the drive to Missouri Railroad stations. Two points on the northern boundary of Texas along the Red River were particularly favorable for crossing, one at Colbert's Ferry and the other at Rock Bluffs Ford. The line followed the Kiamichi Valley in what is now Oklahoma, and then went across the plains to Fort Smith, Ark. From this point, the trail bore northward by a circuitous route through the Ozark mountains across southeastern Missouri and into Springfield. Then it bore northwesterly and again northeasterly into Sedalia, whence it led to Boonville on the Missouri River.

Dangers confronting the cattlemen of that time were many, including bands of outlaws in the wilder regions of southern Missouri and northern Arkansas. Hostility of the Indians, mostly Cherokees, in the northeastern part of Indian Territory was another ever-lurking danger. For many years after the cattle trails between Texas and Kansas were opened, several tribes on the Great Plains remained hostile. Every drive through Indian Territory (now Oklahoma) entailed utmost vigilance against possible war parties even though they seldom interrupted the herds' progress. The drivers were ready to fight any foe in order to accomplish their task. Knowing this, most Indian bands kept away from the cattle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CHEYENNE
EASTERN TRAILS
MONTANA

trails, preferring to raid the scattered frontier settlements, but there were enough of the border red men to harrass the Texans and white outlaws occasionally made their presence felt. Finally, a danger which required constant precaution was the probability of Spanish fever breaking out among the livestock.

This trail was used during the Civil War for the supply of army posts by a half-breed Cherokee trader known as John (or Jesse) Chisholm. Several diversions from this trail were used for the supply of these posts. The northernmost diversion was where the route broke away from the Sedalia trail for Baxter Springs. The most prominent branch of the trail, on the other hand, ran directly up the Arkansas River as far as Fort Zarah, about a mile east of the present city of Great Bend, Kans. Near the modern city of Wichita, one branch led to Fort Riley near Junction City, and another to Fort Harker near Ellsworth. A little west of Great Bend, branches continued which supplied Fort Hays, near Hays City, and Fort Wallace, near Wallace, Kans. The base for these branch trails lay in the Arkansas bottom, on Chisholm Creek. The principal trail continued west from Great Bend as far as Fort Benton in Colorado. The trails leading out of southern Texas to join this route were for the most part purely local ones, the only established "trace" being one running north from San Antonio, touching at Fort Griffin and crossing into "The Nations" (i. e., Indian Territory) at Red River Station in the northeastern corner of Montague County, where Mud Creek joined the river from the north. However, one of these trails was more than local. It was called by some the McCoy trail, and started at Corpus Christi, leading from that point to Austin, thence to Georgetown, on to Decatur and from there to the Red River Station, thence north to the Red Fork of the Arkansas River and on to Abilene, Kansas.

While the result of the early cattle droving was discouraging and unprofitable, it continued and eventually brought great profit. The solution of an outlet for Texas cattle to the East came when railroads were constructed across Kansas. This enabled cattle driven from Texas to be trans-

ported safely and with reasonable speed to the consuming centers. In 1867, the old Kansas Pacific, now the Kansas division of the Union Pacific, was being built from Kansas City due west along the valley of the Kaw. It had reached half way from Missouri to the mountains before the possibilities for livestock transportation were seen. One of the first comers was an Illinois livestock dealer, Joseph G. McCoy, for whom the McCoy trail was named. Encouraged by officials of the Kansas Pacific he located stockyards at Abilene, 165 miles west of Kansas City in a rich prairie section. Contacts were established with Texas cattlemen and during the first season 36,000 head were driven to Abilene, 75,000 head in 1868, and 160,000 in 1869.

The era of the Texas trails had begun. For twenty years these great lines of cattle droving, following the water courses of the West, connecting producing and consuming areas, held their supremacy. Most famous was the "Chisholm" trail, named, according to some authorities, after Jesse Chisholm, the eccentric frontier stockman (Cherokee cattle trader) of Paris, Texas, who was the first to use it to supply the frontier forts of Kansas. However, according to some other authorities, this trail was really named for John Chisum and because of the confusion of the two names the origin of the trail's name has been assigned to the wrong man. John Simpson Chisum was born in Hardeman County, Tenn., August 15, 1824, and came to Texas in 1837, settling near Bonham, but later establishing his home at Paris, Lamar County. About 1854, he began dealing on a small scale in cattle, with headquarters at Paris, where he was county clerk of Lamar County. From Paris he moved to Denton, and in 1857, began to handle cattle on a large scale, driving many of them over the trails, some of which (one at any rate) were then known as the Dimmit and Snyder trails. Immigration to the black land belt of Denton and adjoining counties and the raising of cotton made cattle raising both disagreeable and unprofitable, so John Chisum started West towards the "open range country." In 1865 he established his headquarters at Trickam, in Coleman County, but soon had to move on to Fort Concho, then a ten-company military post. At Fort Concho, Chisum

secured a contract to supply the government with ten thousand head of beef cattle for the Navajo Indians, then on the reservation at Fort Sumner, N. M. There were 7,000 of the Navajos, and the cattle were to be delivered in installments so that there would not be enough at one time to afford meat supply for the Indians and therefore they could not stampede the cattle and go on the war path, with a meat supply on hand.

John Chisum established his headquarters at Bosque Grande (literally Big Grove) 40 miles north of Roswell, on the Pecos. Later on, when "she stuff" would be brought along, another camp was established at Black River, about 30 miles south of the present town of Carlsbad, and there the "she stuff" was cut out and an outfit left to work the ranges. In 1872, John Chisum, who had in the meantime become one of the best-known cow-men in the country, bought the land around the head of South Spring river, 5 miles from Roswell, and established his famous "Jinglebob" ranch. The Jinglebob was Chisum's ear-mark and this seems to be the only instance in cattle history where a ranch or brand of cattle was named for the ear-mark. The Chisums knew Jesse Chisholm well and some few old cowboys are yet alive who remember him. These people say that he was neither a half-breed Indian nor ever lived at Paris, Texas, although he traded around there. He was not even what is known as a "squaw man."

In brief, there were several trails which are now referred to indiscriminately as Chisum and Chisholm trails. The facts seem to be that, except those in New Mexico, the Chisum trails all ran west, while all the so-called Chisholm trails ran north and northwest. In this discussion an attempt will be made to follow the distinction outlined. Recently Colonel Charles Goodnight, one of the pioneer trail drivers after whom a famous trail was named, in discussing the Chisholm trail, supported the view that there is no such trail as Chisholm named after Jesse Chisholm, although of course he recognizes that there was a trail called the Chisholm trail. Colonel Goodnight knew Chisholm well and he states positively that Chisholm never crossed the Red River in a northern direction with a herd of cattle, with the ex-

ception of three small herds of 300 each of his own raising, which he drove to Little Rock, Ark. He followed along the old military road which ran to Fort Gibson and Colbert Ferry on the Washita River and then to Little Rock, where the cattle were slaughtered and the beef was packed, probably the first wholesale packing of beef in that part of the country.

In the winter of 1866 and 1867, Chisholm gathered 600 steers with his own mark and brand out of his herd on the Concho where he had moved the herd during the Civil War. He took the "Goodnight and Loving" trail on the Middle Concho, towards its head, 75 or 100 miles southwest of his ranch. He followed the "Goodnight and Loving" trail to Bosque Grande on the Pecos river and wintered just below Messrs. Loving and Goodnight. They had driven some 3,000 cattle to that point, but had reached there too late to go further northwest until spring. Chisholm sold his cattle on government contract, driving over the "Goodnight and Loving" trail continuously for a number of years. Goodnight had led Chisholm's entire cattle drive for three years, receiving the cattle at Bosque Grande and taking them to the north and northwest parts of Colorado, and then to Dakota and other sections of the northwest country.

The Chisholm trail, according to Colonel Goodnight, should be called the McCoy trail, for McCoy appeared to have established the trail to Abilene in 1867. McCoy sent scouts down to pilot the first herds, and an incident mentioned in Emerson Hough's book *North of '36* speaks of meeting McCoy himself a hundred or more miles south of Abilene, which seems to indicate that the incident actually took place.

By whatever name the trails went among the pioneers, some using one name and others another until one name became generally accepted at a later time, cattle were driven north from various points in Texas along an irregular southern Texas trail, ending on the Red River in Cooke County at the northern border of the state. A detailed log of this trail has been published by George W. Saunders, of San Antonio, Texas, president of the Old Trail Drivers' Association of Texas. He gives the route from the Rio Grande in Cameron County and lists the counties in Texas which the trail traversed. Starting

at the Rio Grande, the trail passed through Cameron, Willacy, Hildago, Brooks, Kleberg, Nueces, Jim Wells, San Patricio, Live Oak, Bee, Goliad, Karnes, Wilson, Gonzales, Guadalupe, Caldwell, Hays, Travis, Williamson, Bell, Falls, McLennan, Bosque, Hill, Johnson, Tarrant, Denton, Wise, Cooke, and Montague counties to the Red River Station, near the mouth of Mud Creek. In general, herds crossed the river at various points within a comparatively short distance of each other, from Colbert's Ferry, 50 miles east of Red River Crossing, to Doan's Store, about 100 miles west. In fact all cattle trailed from Texas across Arkansas would naturally use some part of the original Chisholm trail on the journey to Western Kansas. Northward, the Chisholm trail followed Mud Creek to its head, kept northwest to Wild Horse Creek, to the west of the Signal Mountains, and crossed the Washita at Elm Spring. Due north the trail ran to the Canadian River, after leaving which it soon struck the Kingfisher Creek Valley. This was followed to the Cimarron, touching the heads of Black Bear and Bluff Creeks. Its next considerable stream was the Salt Fork of the Arkansas which was crossed at Sewell's Ranch. Coming into Kansas near Caldwell, the course was a little east of north, crossing the Arkansas near Wichita. Thence the main trail turned northeast, striking Newton, and so on over the divide between the Smoky Hill and the Arkansas Rivers to the prairies south of Abilene.

In the late seventies it became necessary to move the trail further west, as the old trail was being taken up by farmers. The route was changed to go through Wilson, Bexar, Kendall, Kerr, Kimble, Menard, Concho, McCulloch, Coleman, Callahan, Shackleford, Throckmorton, Baylor, and Wilbarger counties to Doan's Store on the Red River. This new route was not only known as the Chisholm trail, but also as the Western trail. Later on, the southern herds quit the old trail in San Patricio county and went through Live Oak, McMullen, LaSalle, Dimmit, Zavala, Uvalde, Edwards, and intersected the Western trail in Kimble county, from which point it followed the well defined and much-traveled pathway to Doan's Crossing on the Red River. As Mr. Saunders remembers it, the trail to Dodge City from Doan's Crossing passed up the North Fork of the Red River crossing it at the Wichita Moun-

tains, thence up the North Fork to Indian Camp, Elm Creek, Cash Creek, the Washita, the Canadian, Sand Creek, Wolf Creek, Otter Creek, Beaver Creek, the Wild Horse and the Cimarron on up Bear Creek and Bluff Creek to Mailey's Roadhouse, Mulberry Creek and Dodge City. Reference to maps shows that it was the multiplicity of creeks and the scarcity of larger rivers that constituted one of the most powerful arguments in favor of the Chisholm trail. This "Old Chisholm Cow Trail" varied in width at river crossings from 50 to 100 yards, though in some places it spread out as much as one or two miles. The average drive in a day was eight to ten or twelve miles, and the time on the trail was from 60 to 90 days, from points in Texas to Abilene, Newton, or Ellsworth, Kansas. Along this trail for 20 years there passed the wealth of an empire.

Of equal importance with the Chisholm was the "Old Shawnee" trail, earlier called by many the "Baxter Springs" trail. It was called "Shawnee" because it passed through the Shawnee Indian Country. This trail led to Baxter Springs, a shipping point and cow town which was opened at about the same time as Abilene, and was in the southeast corner of Kansas, on the newly-completed Fort Scott and Gulf Railroad. The old Shawnee trail left the Red River near Snivel's Bend about ten miles east of Red River Station on the Chisholm trail, with which it ran nearly parallel for approximately 100 miles northward, where a connecting trail ran from it into the Chisholm Trail at Elm Spring. The Shawnee Trail then turned northeast on the north side of the Shawnee Hills, crossing the Canadian and northern Canadian Rivers, near the Sac and Fox agencies, then passing through the creek reservation and fording the Arkansas west of Fort Gibson. Turning more easterly, it passed west of Vinita to Baxter Springs.

Running between the two main trails was the "Middle" or "West" Shawnee trail. This trail left the "Old Shawnee" at the Canadian River and went nearly due north until it struck the Arkansas River. It followed the valley of the Arkansas into Kansas, whence it ran through the Whitewater Valley, then north and east, crossing the Cotton River, proceeding thence along the Neosho and Clark's Creek valleys and ending at Junction City, 25 miles east

of Abilene. In later years, the Chisholm trail gave off a western shoot which left it near Elm Spring and, passing near Fort Reno, went on northwest into western Kansas, striking Dodge City on the Arkansas, and also going northeast to Ellsworth on the Smoky Hill River. With the settling up of the country, cattle were driven farther and farther to the west, until this western Chisholm trail became the chief route for herds destined either for market or for maturing in the bracing air and rich pastures of Wyoming and Montana.

While individual drovers often varied their courses from the main beaten paths, for the most part the traffic of the cattle days followed the greater lines, as the bulk of commercial shipments today is made over a few prominent railroads. Of the trails leading to the feeding and maturing grounds of Wyoming and Montana, one of the most noted was the Yellowstone trail, the southern or Texas part of which some claim was really the old Dimmitt and Millet trail, and which in 1872 at least was known as the Snyder Trail after a cattleman of Round Rock, Texas. Five and one-half months were required for the trip, from the middle of March to the latter part of August, traveling less than 15 miles a day. Beginning at Matagorda Bay, Texas, it continued through Indian Territory, now Oklahoma, and then through Kansas to Hays City. From Hays City, north of the Smoky Hill River, the trail ran into western Nebraska and followed the Platte River into Wyoming and then northeast to Tongue River, from which point it ran north to Miles City, crossing the Yellowstone before it reached that point. From then on its course lay towards Billings, Mont., but when the cattle reached the Tongue River crossing they could be driven anywhere, for the country abounded in winter ranges. One end of this trail was at the head of the Running Water Creek in eastern Wyoming where the Wulfjen Ranch was situated. Another trail ran north from the cow town of Abilene. Cattle bought at Abilene were in demand as feeders. Many beeves were sold for delivery north of Cheyenne, Wyo., to rangemen and army contractors. The cattle were started during the summer and moved northwest. Upon reaching the Republican River the trail followed that river valley to the Colo-

rado line, and then tacked north for Cheyenne and Fort Russell. Cattle bought at Abilene for feeding were also sent north to Dakota Territory and to certain points on the Missouri River.

However there were other trails of which mention should be made. One of the trails to Colorado was later called the "Goodnight" trail, named after the noted cattleman already mentioned, Colonel Charles Goodnight, who still survives in the fullness of years. This trail was used until railroads were built northwest from Fort Worth to Colorado in the eighties. In the late sixties or early seventies, Mr. Goodnight went into the Colorado country, establishing what was known as the Goodnight, or the "Goodnight and Loving" trail, laying out the old Tascosa route to Dodge City, Kansas, which became famous as the "Chissum" trail and naturally produced the confusion as to the identity of the original Chisholm cattle trail. In following the Goodnight trail, the usual route was by way of Fredericksburg, Mason, and Brady City, and the western trail at Cow Gap. This went through Albany and near Fort Griffin, where it left the western trail and used a route through to Trinidad, Colo., via the Double Mountain Fork of the Brazos, the Wichita, and Pease Rivers and the Charles Goodnight ranch on the Staked Plains. The herds crossed the Canadian River at Tascosa, a typical cowboy town. The next goal was Trinidad, Colorado, over both a trail and freight road. The drive up the South Platte took the cattle for 300 miles along the foothills of the Rockies. They went out by way of La Junta, Colo., then to Deer Trail, and after leaving Cheyenne, Wyo., the cattle made for Powder River and up to Sheridan.

Still further west was the Pecos trail, whose course was up the Pecos River valley in New Mexico and on north to Colorado. This was one of the earliest trails from Texas in 1865 and 1866 and led from a headquarters camp at Belknap on the Brazos River to Fort Sumner, N. M. Fort Sumner lay northwest, but the trail bore off to the southwest from its starting point, because it was the only route at that time open to the Pecos River. The trail crossed the south fork of the Brazos, passing through Buffalo Gap, afterwards a well-known landmark on the Texas and Montana trail. Passing over the divide between the waters of

the Brazos and Concho, the trail struck the "Old Butterfield" stage-route, which ran by way of Fort Concho to El Paso, Texas, on the Rio Grande. The stage road was over the original Staked Plains, surveyed and located by General John Pope in 1846.

One explanation of the name "Staked Plains" is that in pioneer days the route was marked by stakes until it became a thoroughfare, from which the whole northwest Texas took the name of Staked Plains. In this region there was a 96-mile dry drive between the head waters of the Concho and the Horse Head Crossing on the Pecos. About 15 miles south from the Pecos, the trail entered a canyon called Castle Mountain Gap. The Horse Head Crossing was named by General Pope, probably because the meandering of the river formed a horse's head. Leaving Horse Head Crossing the trail lay through Dagger Bend and northwest on up the Pecos River. This trail up and down the Pecos valley was later known as the "Chissum" and afterwards extended as far north as Fort Logan in Colorado and other government posts in Wyoming. However, this trail should never be confounded with the Chisholm, previously mentioned, first opened by the half breed, Jesse Chisholm. The end of the original trail was at Fort Sumner, N. Mex., a six-company post, and the agency of the Apaches and Navajos. One advantage of this trail was that all along the Pecos there was a splendid winter range for the cattle. From Fort Sumner the trail ran north to Trinidad. Among other trails often referred to, but never located definitely enough to put on a map, was the trail named after one of the great drovers of those days, Colonel George W. Littlefield, recently deceased, of Austin, Texas. He drove more cattle than most of the cattlemen and to his energy and capital are due much of the advancement of the Panhandle country.

Cattle were occasionally driven from Texas to California along a fairly well defined trail. This trail ran from Jim Ned, a tributary of the Colorado of Texas, in Coleman County, up the "Old Concho" trail to Fort Concho, now a part of the progressive city of San Angelo. From the head waters of the Concho, the 96-mile drive previously noted was made to Horse Head Crossing on the Pecos River. This part of the trail was the old military stage route used by the government before

the Civil War. The Pecos was left near the present town of Roswell, and the trail went up the Hondo and out over the mountains by Fort Stanton. Then, by way of the Gallina mountains, the trail crossed the Rio Grande at Old Albuquerque, over to and down the Little Colorado of the west, through the remainder of New Mexico into Arizona, by the point where Flagstaff is now located, paralleling the Grand Canyon on the south side of the Colorado, fording the Colorado at Hardyville above The Needles, crossing the California desert and climbing over the Sierra Nevada mountains. The cattle were then wintered between San Bernardino and Los Angeles in California, following the 1,500-mile drive. Often in the spring the cattle were driven back across the Sierras, north up the east side of the mountains to the head of Owens River, where they were fattened on luxuriant California meadows and then driven to Reno, Nev., where they were sold to Miller and Lux, who shipped them to their packing plant in San Francisco.

Cattle droving early became a great business, for in 1870 about 300,000 thousand head arrived at Abilene. In 1871, nearly 1,000,000 head were driven north, of which 600,000 head went to Abilene, while the other cow towns—Baxter Springs and Junction City—received 300,000 more. For miles around the chief shipping points livestock were herded awaiting a chance to ship or sell. But the winter of 1871 and 1872, with its bad weather, cold winds, and ensuing Spanish fever, caused a temporary collapse of the cattle droving boom. With it Abilene's prestige fell.

Following the revival of cattle droving after the panic of 1873, Ellsworth, 40 miles west of Abilene, became the shipping point on the Kansas Pacific Railroad. The Atchison, Topeka & Santa Fe being nearly completed through the southern part of the state by this time, it began to compete for the cattle shipping trade. Newton, where the railroad crossed the trail to Abilene, stopped many of the herds, and with Ellsworth divided the claim to the title which Abilene held for several years of being the "wickedest town in the West." This phrase afterward applied to Dodge City, and later to Leadville, Colo., and Deadwood, S. Dak. Wichita also claimed attention from the cattle drovers, and 80,000 head went from there in 1872, while

three times that number were shipped from all other towns together. Soon after this Dodge City, on the Chisholm trail's western offshoot to Ellsworth, being reached by the Santa Fe Railroad, took the more northern station's trade, just as Newton had absorbed Abilene's business, and for 12 years was the acknowledged shipping center for Texas cattle in the state. During 1877 and 1878, a new market was being developed at Okalalla on the Platte River in Nebraska and fully one-third of the herds passed on to this point, which was north of Dodge City.

Meanwhile the occupation of the West was going on feverishly and money was being put into ranches and cattle, thus giving a ready market to the drover from Texas. While the droving never reached such proportions as in 1884, which was the climax year when 825 thousand head of cattle passed a given point in 90 days' time, it continued to be extensive until the building of the railroads across the Indian Territory and the establishment of railroad shipping points in Texas itself. Even then, droving did not cease altogether and a few herds came straggling along each year to Dodge City, Wichita, and other points.

The opening of Oklahoma in 1890 made another barrier and the season of 1891 saw the last of the cattle droving. For there was neither advantage nor convenience after that year in this method of marketing, when railroads spanned the whole distance from Texas to the industrial East. From then on, the only herds to wind their slow length over the once populous trails were the young stock taken in this leisurely way from the warm climate of the Gulf region northwest, skirting the foothills of the Rockies to reach, after a six months' journey, the highland feeding grounds of the Northwest.

The cattle trails served an excellent purpose in the development of the country, for they brought the north and south of the Mississippi valley into close business relations immediately following the Civil War, a condition which was of great economic and political advantage to both. But the system could not endure. The ever-extending railroad and the homes of the settlers pre-empted the grazing grounds and changed long since in permanent fashion our methods of livestock transportation and marketing.

FARM TENANCY MOVES WEST

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Farm tenancy has been regarded by some as one of the outstanding evils of American agriculture—a foul monster dragging free American manhood down to the levels of European peasantry. By others, more optimistic in temperament or more logical in their analysis of the situation, it has been looked upon as a normal element in the economic system, a means whereby the young man not yet possessed of capital for purchase could obtain the use of land and start at once upon the career of an independent farmer. According to this more favorable opinion tenancy constitutes one step toward farm ownership—one rung on the so-called agricultural ladder, which starts with farm labor on the home farm or for wages and ends with the full ownership of a farm.

Whichever view one may hold, tenancy is an important factor in the development of American farming, and the question of its present trend and its probable movement in the immediate future is a live question. Farm tenancy in the South was largely an outgrowth of the breaking up of plantations after the Civil War, and in recent years it has followed closely the widening boundaries of the cotton-growing area. In the North, however, tenancy seems rather to have followed the general development of the agricultural industry.

From the days of Horace Greeley to the end of the nineteenth century the admonition, "Go West, young man, go West," was freely accepted as good advice by hundreds of thousands of enterprising farm boys born and bred in the East or in what we now term the Middle West. Now, strangely enough, the area in which farm tenancy is most prominent seems to be following the same admonition. Or is it strange after all? Tenant farms certainly would not be found in a pioneer country; for men would not pay rent on farm land so long as new land could be had for the taking or for a nominal sum in the form of homestead fees.

I

The westward movement of farm tenancy has been evident for twenty years, but it stands out with especial clearness in the returns for the 1925 farm census. The total number of tenant farms has increased very little since 1910, and the net gain between 1920 and 1925 was less than 8,000 (an increase from 2,454,804 to 2,462,528). This net increase, however, is the resultant of much greater changes in different parts of the country—of considerable increases in one section almost balanced by decreases in another section.

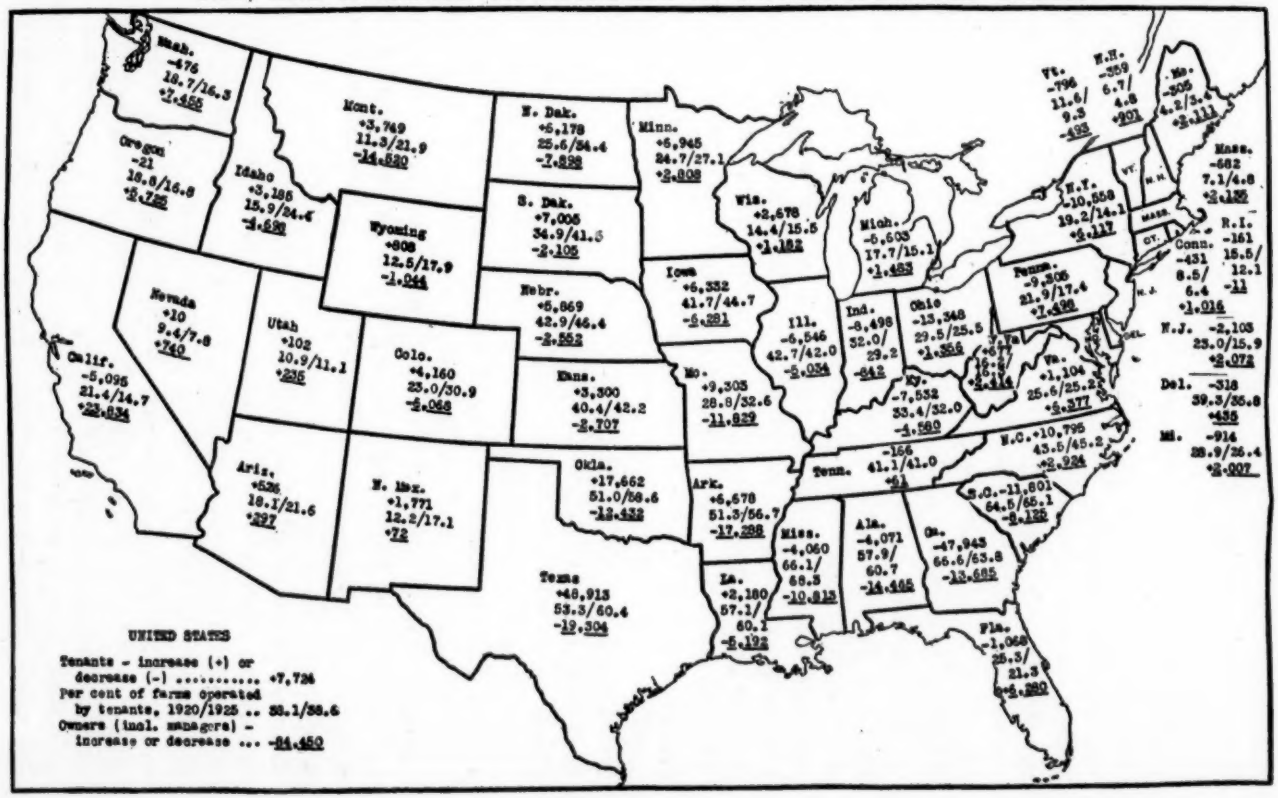
Specifically, in 23 states, containing slightly less than one-half the total number of farms, the number of tenant farms increased by about 150,000, while in the remaining 25 states the number of tenant farms decreased by about 142,000. The 23 states showing an increase in farm tenancy are nearly all in the West, while the 25 states showing a decline in tenancy are all in the East, except that the 3 Pacific Coast states are included in this group. The net increase of a little less than 8,000 tenant farms, already noted, carried with it a change in the percentage of farms operated by tenants from 38.1 in 1920 to 38.6 in 1925[1].

The accompanying map shows: First, the actual increase or decrease in the number of tenant farms from 1920 to 1925; second, the percentage of tenancy in 1920 and 1925; and third (the underscored figures), the increase or decrease in the number of owner-operated farms,[2] from which one may judge as to whether the change in the tenant farms represents a transfer between tenants and owners or is incidental to the growth or decline of the total number of farms. In ten states the number of tenant farms increased between 1920 and 1925 by more than 5,000, namely, in Texas, Oklahoma, North Carolina, Missouri, South Dakota, Minnesota, Arkansas, Iowa, North Dakota, and Nebraska. Four of these are cotton states having considerable areas outside the territory infested by the

[1] The total number of farms in the United States registered a slight decrease (from 6,448,343 in 1920 to 6,371,617 in 1925), but the change in this basic figure was so small that we may fairly speak of the increases and decreases in the number of tenant farms as indicating changes in the relative as well as the absolute importance of tenant farming.

[2] With the owner-operated farms are included the small number of farms reported as operated by managers.

INCREASE OR DECREASE IN TENANT FARMS, 1920-1925; PERCENTAGE OF TENANCY IN 1920 AND 1925; AND INCREASE OR DECREASE IN OWNER-OPERATED FARMS



boll weevil, in which cotton growing has been making rapid gains. The remaining six states are in a solid block in the corn and wheat section of the upper Mississippi valley. In ten states, too, the number of tenant farms declined between 1920 and 1925 by more than 5,000, these states being Georgia, Ohio, South Carolina, New York, Pennsylvania, Indiana, Kentucky, Illinois, Michigan, and California. Two of these states are in the boll weevil district and show a marked decline in the number of owner-operated farms as well as tenant farms. Seven of the number are in a group clustered around Ohio as a center, and the remaining one is on the Pacific Coast.

These are the facts. Now why have these counterbalancing changes taken place? First, as to the cotton states. The number of tenants has increased in those states where it has been possible to extend the acreage of cotton, which has been mainly outside the territory seriously affected by the weevil. In such areas many one-time ranches and other large holdings have been cut up into small cotton farms, operated by tenants coming in from various points and of varying previous experience. The decreases have taken place in those states where the tenants, discouraged by years of conflict with this pest and perhaps attracted by offers from Northern industrial cities, have left the farms and plantations. Tens of thousands of acres of fertile land lay idle in these areas in 1924 for want of tenants to operate them. With up-to-date methods of weevil control, this land will come back into use; or perhaps it will come back into use for crops other than cotton.

On the whole, the recent developments in the tenancy situation in the Cotton Belt appear to be the result of temporary conditions. It is difficult, therefore, to make any definite forecast of the trend of tenancy here in the future. One thing is certain, though. So long as cotton is raised by the present methods, so long will cotton farming be dominantly tenant farming.

In the North we have seen that there were two blocks of states showing contrasting conditions with respect to changes in farm tenancy—a block east of the Mississippi River in which tenancy has shown a marked decline, and a block just west of the River in which tenancy has shown a considerable

increase. In both of these areas corn and wheat are major crops and in both of them dairying is an important branch of agriculture. Nor is there any imported pest like the weevil of the Cotton Belt to account for shifting areas of prosperity and lack of prosperity.

There is one parallel, however, (though it may be a matter of accident) between the situation here and that in the cotton states. It is in the older cotton states that the number of tenant farms has declined and in the states where cotton is a new crop that it has advanced. So in the North it is in those states where farming in general is the oldest that tenancy has declined and in those states more recently developed that it has made significant growth.

In the New England states tenancy has been declining since 1900; in the Middle Atlantic states, since 1910; and since 1920 the decline has crept westward to the East North Central group, following the path marked out by the pioneers who pushed the farming industry westward over the Appalachian Mountains and through the forests of Ohio and Indiana to the Mississippi Valley. Section by section these states have reached a sort of saturation point with respect to tenancy and have either maintained a stable proportion or shown a decline in the number of tenant farms.

Though the Pacific Coast farms were occupied later than those in Iowa and Missouri, this territory was settled earlier than the Rocky Mountain area, and the three Pacific states now show a decline in number and percentage of tenant farms in marked contrast with the Mountain states, which uniformly show an increase.

II

We speak of the westward movement of tenancy, as though 47,943 tenants might have migrated from the farms in Georgia to the farms in Texas and joined with a few others from Alabama, for example, to make up the increase of 48-913 tenant farms in Texas. Except in a very limited way, however, it does not seem likely that actual migration of tenants from one state to another has been involved. Doubt-

less, there is some transfer of farm tenants from one state to a neighboring state where conditions are more favorable, but we have no evidence of such movements on any spectacular scale.

The relations between the changes in the number of owner farmers and in the number of tenant farmers within the boundaries of many individual states are significant. In the state of Iowa, for example, the increase of 6,332 tenant farms was almost exactly balanced by a decrease of 6,281 owner-operated farms. In North Dakota and Missouri the decrease in owner farms was somewhat greater than the increase in tenant farms. For an extreme example we may take the state of Montana, which is not included in our group of 10 states but which shows a decrease of 14,520 owner farms along with an increase of 3,749 tenant farms. These changes, and to some extent similar changes in adjoining states, doubtless reflect the discouraging conditions affecting agriculture in this part of the country during the past few years. In Minnesota and also in North Carolina, the increase in the number of tenant farms was accompanied by a substantial increase in the number of owner farms.

Crossing the river to the Eastern group, made up of states showing a decrease of more than 5,000 tenant farms, we find that in Pennsylvania the decrease of 9,305 tenant farms was almost offset by an increase of 7,498 owner farms. In New York the decrease of 10,558 tenant farms was partly offset by an increase of 6,117 owner farms; and in Ohio and Michigan there were small increases in the owner farms, amounting to 10 or 20 per cent of the decrease in the tenant farms. In the other states of this group there was a decrease in owner farms as well as tenant farms, except in California, where the increase of 23,834 owner farms far exceeded the decrease of 5,095 tenant farms.

One important reason for the increase of farm tenancy in the states just west of the Mississippi (Iowa, Missouri, Nebraska, and so forth) is the fact that in this area more than anywhere else tenancy forms a part of the "agricultural ladder"—that is, of the regular process by which a farmer's son becomes in due time a farm owner. In this section, too, a

very large percentage of the farm tenants are closely related to their landlords. These tenants are the sons or sons-in-law of the land owners, who themselves are retired farmers or farmers on the point of retiring. In some counties in this section more than half the total number of tenants rent their farms from a close relative. Tenancy under such conditions may almost be termed a part of the system of land inheritance. This type of tenancy must certainly be regarded in a different light from the type under which a man who becomes a farm tenant expects to remain a tenant all his life, or where tenant and landlord have no common ties or interests.

Incidentally it may be noted that cases where landlords and tenants are closely related are much more frequent in those states having few industrial cities and hence fewer alternative "calls" to draw the younger generation away from the farms. New York and Pennsylvania, which together show a decline of almost 20,000 tenant farmers from 1920 to 1925 (with an increase of about 14,000 farm owners), are dotted with manufacturing and commercial cities of rapidly increasing population. North and South Dakota, on the other hand, which increased their tenant farms by 13,000 (with a decrease of 10,000 in the number of owner-operated farms), have practically no manufacturing centers, so that the farms are naturally passed on to the farmers' sons rather than being sold to newcomers, perhaps of foreign origin, as has often been the case in the East.

III

In New England, and to some extent in other Eastern states, there has been an increase in the number of farms through the establishing of small truck and poultry farms near the manufacturing cities, which is not correspondingly reflected in the farm acreage or in the volume of farm products. These places are for the most part owned by their operators, so this development tends to pull down the percentage of tenancy still further in an area where it was already on the decline. In the East, then, farm tenancy seems to have reached its peak and commenced to decline—perhaps be-

cause many of the Eastern farms are no longer profitable enough to enable a tenant both to make a living and to pay even a moderate rent.

In the West, except on the Pacific Coast, the percentage of tenancy and the number of tenant farms are still increasing and likely to increase in many states for a number of decades yet. There too, however, the point of saturation will presently be reached, according to the indications; and with local changes resulting from local conditions (like the movements in the cotton states in the past five years) the number of farm tenants and owner-farmers in the United States will come to a balance and remain relatively stable.

Certainly the results of our latest national farm inventory give no indication of a wave of tenancy sweeping over the country, nor of any general or extensive increase in the area of farm land held by non-resident landlords and operated by tenants in whom the landlords manifest no interest beyond the collection of the rent.

THE BALANCE OF TRADE IN FARM PRODUCTS

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During the past few decades great changes have taken place in the distribution of foods. Formerly most communities produced many or all of the products they required, but probably the most important factor in supplying any market with food at the present time is the great geographic specialization which characterizes production. Few indeed are the sections which can supply all their own food needs. Areas of production are generally devoted largely to those products for which they are peculiarly adapted by soil and climate. Maine, Wisconsin, and the South grow potatoes. Meats are provided by the flocks and herds of the plains through the great packing houses of the Middle West. New York and the Northwest grow a great proportion of the apple crop of the country, while peaches are largely produced in Georgia and Michigan.

Obviously deficits in local production must be made up from distant sources. Improved facilities for transportation and storage have made available for nearly all markets the products of the entire country in fairly uniform supply, and the variety of our foods has been greatly increased.

We are, moreover, much more concerned than formerly about the purity and quality of our foods. Legal standards have been set up to protect the consumer from fraud and adulteration. Bread must be weighed and wrapped; milk must be processed, tested, and bottled; cold storage goods must be marked; and meats must be inspected.

The distributive system is further complicated by an increasing number of sales agencies. The storage and cold storage plants, with the necessity for rapid movement of perishables, the chain and department stores, and the direct wholesale method of marketing foods have all become common within a comparatively few years.

All this complexity has increased the marketing cost of food as compared with the farm and manufacturing cost. At

the same time, farm and manufacturing costs have also risen, due in part to higher labor and equipment expense, increased taxes, and greater transportation charges. These increased costs in conjunction with more expensive standards of living have caused anxiety to those housewives whose family incomes are less than $150 per month. They find that nearly half of this amount must go for food. Rent, fuel, clothing, and the other necessaries have all increased in price relatively more than food since pre-war days, hence the added difficulty of providing for the food budget unless the family income is materially increased.

Investigations by the Federal Bureau of Labor Statistics indicate that the food costs of workingmen's families in Massachusetts are materially higher than the average food budget for the country as a whole. This fact has aroused and alarmed many of our manufacturers who must produce in competition with the states whose workmen enjoy cheaper living costs.

The present study is one of the series undertaken by the Massachusetts Agricultural College to find out and present to the public the facts concerning the food supply of New England. The attempt is made to present (1) the food supplies consumed in the city of Fitchburg, the "food demand," and (2) the sources upon which a given population depends for its food. A comparatively small part is supplied by surrounding farms and workingmen's gardens, but individual cities differ greatly in this respect. Detailed studies of the local supplies of several cities would probably show some very real savings to consumers and some forms of profitable production to farmers through a more plentiful supply of locally grown food stuffs.

Whether products will be supplied locally depends on the demand for them and the price offered. Local milk and eggs are desired above those from a distance, but the prices offered are not always sufficient to call forth a large supply. In many cities local meat is less desirable than Western, and can find a market only at a lower price.

In some instances local farmers find a distant market more desirable than that nearby. Occasionally the local production

of eggs, fruit, or vegetables is greater than the local demand. In both instances the balance of trade shows out-shipments of locally grown food stuffs at certain seasons. If the soil, climate, labor supply, and economic conditions are favorable to the production of certain crops which can be exported at a profit, such production may well be encouraged. Tobacco and onions in the Connecticut Valley, cranberries on the Cape, apples in several localities in the state are examples. On the other hand, a careful study of the balance of trade—the foods shipped in compared with the farm products shipped out—may show the advantage of cutting down the acreage of crops for export and replacing them with others which nearby markets demand and now import from a distance.

Unfortunately, there are few established facts and almost no local data on food consumption. This study was undertaken to discover racial and national food preferences, to determine quantities of specific products required by a given population, and to learn quantities of various products supplied from local sources.

A few studies of a similar nature have been made elsewhere, notably that of the Port of New York Authority, entitled, *Report on the Food Supply of the Port of New York;* another made more recently in Pennsylvania, dealing with the food supply of Altoona, entitled, *Adjusting Production to Meet Home Market Demands in Blair County, Pennsylvania*[1]*;* and a third, *Adjusting Agricultural Production and Distribution in South Central West Virginia to Meet Home Market Demands.*[2]

For this study the city of Fitchburg was chosen because statistics of incoming and outgoing foodstuffs were available and information concerning local products offered on the local markets was unusually complete. Data were secured at first-hand. Facts concerning shipments of foods were obtained from the freight records of the Boston and Maine Railroad Company, the New York, New Haven and Hartford Railroad Company, and the Fitchburg and Leominster Street Railway Company.

[1] Dunlap, R. B., and Critchfield, B. H., authors, published as *Bulletin 184, Pennsylvania Experiment Station,* 1924.

[2] Armentrout, W. W., Crosby, H. T., and Richards, H. I., authors, published as *West Virginia Experiment Station Bulletin 188,* 1924.

Fitchburg is located in the northern part of Massachusetts, roughly, one-third of the distance inland from the coast. In 1920, the Federal Census Bureau reported a population of 41,029. The last available analysis of population—the Massachusetts census report of 1915—gave 35 per cent of the inhabitants as foreign-born, and 43 per cent as native born but of foreign parentage, making a total of 78 per cent of foreign descent, counting only two generations. It must be recognized that the second and third generations of foreign descent will to a great extent follow the same dietaries as those who are foreign-born.

Striking differences exist in the dietaries of these various nationalities. The Italians are very fond of all kinds of vegetables and use whatever is on the market. The French, on the other hand, have decided preferences for certain varieties and consume very few of some other kinds. The Polish also use large quantities of certain vegetables, but ignore others entirely. The Finnish people import some products from Finland, notably the *lingon* (link'-un) berry, a small variety of cranberry. These berries are shipped to this country packed in barrels and covered with water, no other preservative being found necessary. The Finns have also their bakery, co-operatively owned, where are prepared the baked goods which they prefer. As in their native land, they use great quantities of fish, both fresh and salt.

The Greeks eat little meat except lamb, buying chiefly the forequarters. These are shipped into the Fitchburg market in such quantities that they are locally known as "Greek meat." Many of the Greek women are employed in the factories and find lamb more convenient than other meats because they can cook it in the short time allowed for the noonday meal. The forequarter is chosen because it is comparatively inexpensive. The Hebrew population demands, of course, "kosher meat," which is supplied by the two local slaughter-houses, the sheep and cattle being killed in the presence of the rabbi, according to the method prescribed by the old Mosaic law.

Large quantities of foodstuffs brought into Fitchburg are distributed to the surrounding towns, some by rail, but more

by truck. The areas over which products are distributed vary. Meats are probably sent out more widely than any other product. Some retailers in neighboring towns buy large quantities of many commodities in Fitchburg.

Accepting the annual per capita consumption of 10,377 pounds of meat "per equivalent male," as estimated from the figures of the United States Bureau of Labor Statistics,[3] a normal consumption of meat for the city of Fitchburg would be 2,852,600 pounds, not including poultry. This amount would be divided as follows:

Beef, 1,607,600 pounds; Veal, 106,660 pounds; Pork, 621,-275 pounds; Lamb and mutton, 213,300; Meat products, 303-765.

Records show a much larger total of meat shipped into Fitchburg than can be accounted for by the average consumption cited. Local slaughterings supplied in 1919 some 618,-000 pounds of this amount, mostly "kosher meat," which was all consumed locally. In addition, the Railway Express Company brought in approximately 3,000 pounds of lamb each week, the "Greek meat" already mentioned, making a total of about 774,000 pounds provided annually chiefly for these two groups.

The local branches maintained by the packing houses operate trucks which deliver meat to smaller markets within a radius of thirty miles. Figures as to quantities of meats actually shipped out are not available, but it is evident that these combined markets demand more meat than does Fitchburg, as the population of the area covered amounts to more than 100,000.

The total amount of meat (exclusive of fish and poultry) received from sources reporting was 8,396,230 pounds in 1919, all but 7 per cent of which must be secured from outside sources. It must be recognized that the consumption of meat varies considerably from year to year. In 1900, the per capita consumption of meats and lard inspected by the federal government was 181.5 pounds. In 1910 this had fallen to 163 pounds, but since that year the trend has been generally upward.

[3] Bureau of Applied Economics, Inc., *Standards of Living;* also Comish, *Standards of Living,* N. Y., 1923.

Transportation lines report 200,500 pounds of poultry brought into Fitchburg in 1919, while 16,000 pounds were shipped out by the same agencies. Some 155,000 pounds are known to be supplied by near-by producers for the Fitchburg market, and in addition considerable quantities are distributed from door to door by milkmen and farmers. Back-yard flocks probably supply a good many pounds for home consumption, but figures are lacking for both these sources of supply.

An average of seven estimates gives 8.8 pounds of poultry as the normal consumption, indicating a probable annual demand of 242,000 pounds for Fitchburg. Quantities incoming and outgoing by motor truck are not obtainable, but the figures given above allow for a surplus of at least 113,500 pounds, which is probably distributed to surrounding towns or shipped to Boston, mostly by express or truck, since but 16,000 pounds are reported shipped out by rail.

In addition to these supplies of meat and poultry, Fitchburg receives by rail 1,484,000 pounds of fresh and salt fish, of which 321,000 pounds are shipped out by the same agencies. The normal consumption of fish is estimated at 378,000 pounds, leaving about twice this amount to be distributed from Fitchburg to other communities.

These figures give a total of 10,080,730 pounds of all meats, except canned goods, shipped into Fitchburg. Local supplies increase the available quantity to at least 10,853,730 pounds. This would supply the needs of a population three times the size of the city of Fitchburg.

Approximately 945,500 dozens of eggs are brought annually into Fitchburg by rail, while some 450,000 dozens are supplied from local sources and handled by local dealers. In addition, there are many back-yard flocks of poultry which supply unknown quantities of eggs. The total available supply is therefore at least 1,395,500 dozens, of which 162,000 dozens are shipped out by rail, leaving 1,233,500 dozens for consumption in Fitchburg and near-by markets.

The normal demand in Fitchburg is estimated as 604,780 dozens a year. The known supply from local sources will therefore meet nearly 75 per cent of this demand.

The total reported receipts of whole milk in Fitchburg amount to 17,890 quarts daily. Of this, nearly 24 per cent is supplied by the town of Fitchburg, while 84 per cent is of Massachusetts origin. Practically all the remainder comes from New Hampshire.

In addition to the whole milk distributed in the city, Fitchburg receives daily 205 quarts of cream which is distributed by milk dealers, and some 197,200 quarts received annually but not reported to the milk inspector because it is not sold to the consumer as cream, being used chiefly for ice cream.

It is estimated by the inspector that these figures represent 90 per cent of the total supply for the city, the remainder being supplied by family cows owned within the city limits. This brings the total available supply to 19,880 quarts daily. Omitting from the calculation the cream used in ice cream, we still find a per capita consumption of slightly over a pint per day. A recent study of the United States shows an average consumption of whole milk and cream to be 1.2 pints daily.

The transportation lines reported incoming in 1919 practically 10,000,000 pounds of vegetables. Reported local sources add nearly 2,000,000 pounds to this quantity, but since more than 2,000,000 pounds are also shipped out by rail, obviously a considerable quantity is provided by home gardens and by producers who distribute from door to door as well as to retailers. This quantity must total at least 2,500,000 pounds in order to supply a normal demand for vegetables.

For many years considerable market garden produce has been grown in the vicinity of Fitchburg. Most of the growers have small farms and do not specialize in the production of any crop, growing several varieties of vegetables and some fruits. These products come to the Fitchburg market from several towns in Massachusetts and New Hampshire.

Some early greenhouse vegetables are regularly shipped to Boston or New York. A good many cucumbers are grown under glass, but as the Fitchburg market does not demand them at the highest prices of the season, they are generally shipped to New York.

Onions are received largely from the Connecticut Valley area, while potatoes come to the Fitchburg market chiefly from

Maine, various portions of Canada, and from the Middle West. These and root crops, which come also largely from Canada, are received in carload lots, but other vegetables received from outside sources are usually shipped in less than carload lots.

Local sources supply certain products in quantities large enough to meet the demand during the season of production. It is probable that enough tomatoes are grown in the vicinity of Fitchburg to supply the entire local demand. The demand for fresh tomatoes, however, is distributed over a longer period of the year than is the local production. Hence tomatoes are both imported and exported. About half the estimated normal demand is supplied by the local product marketed through one commission service, and there are considerable quantities supplied through other agencies. The quantities so sold are, however, unknown.

The local supply of lettuce is considerably in excess of the normal demand in the city, large quantities being shipped out. Some of this is, of course, a greenhouse product.

The normal consumption of fruits in Fitchburg is probably 4,000,000 pounds annually, some 122 carloads coming from outside sources. Bananas constituted 28 per cent of this amount, while citrus fruits made up 35 per cent. Apples are nearly all from local sources, the small quantity of 3,130 bushels being reported as brought in by rail. Accepting 65 pounds as the per capita consumption, we find nearly 30,000 bushels of apples necessary to supply the city. Known sources supply 10,000 to 13,000 bushels, leaving from 15,000 to 20,000 bushels to come from orchards near by. Most of this quantity is undoubtedly brought in by motor truck and other vehicles.

In the year 1919 some 56,000 pounds of berries were shipped into Fitchburg by rail, and about 10,000 pounds of berries locally grown were handled by retailers. A known total of about 65,000 pounds was thus available for local consumption. It is probable that a much larger quantity reaches the tables of the city, either grown in home gardens or distributed from door to door by growers. For these no statistics are available, but judging from the estimated normal consumption, these sources must supply more than four times as many as are obtained from known sources.

The accompanying tabulation presents the reported local production of the various classes of foods and the percentage which reported local supplies comprise of the total requirements as estimated on the basis of the United States Bureau of Labor figures for consumption.

TABLE I

Percentage of Foods Produced Locally
(pounds)

Commodity	Estimated consumption	Reported local production	Per cent of requirements locally grown
Milk and cream	15,526,500	15,526,500	100.0
Eggs	822,400	576,000	74.4
Meats (incl. poultry)	3,418,930	773,000	22.6
Vegetables	12,434,275	1,833,870	14.7
Fruits	5,139,530	575,630	11.8

Without doubt, as mentioned in the discussion of various specific products, there are more local products supplied to the local market than are here reported; but it is notable that so large a proportion of the food products are produced locally.

Table II shows quantities of foods received in Fitchburg from outside sources in 1919; the quantities outgoing (mostly shipped to smaller towns in the vicinity); and the quantities locally produced. In the last two columns are given also percentages of the supply available for Fitchburg and vicinity received from local sources and the percentages of the various foods in the dietary.

It is evident that a large proportion of Fitchburg's food is supplied by local farms. Eighty per cent of the milk comes from the territory lying close to the city. Nearly all the apples are from local sources and a very large proportion of the fresh berries consumed in the city are from local farms or gardens. There is enough poultry to supply about 75 per cent of the eggs needed, and probably about the same proportion of the poultry consumed is also from local sources, nearly 65 per cent of the normal estimated demand being reported. Back-yard flocks supply a considerable amount in addition, and some is known to be distributed by milkmen and

TABLE II

Quantities of Foods Shipped into Fitchburg, 1919; Quantities Outgoing; Local Production; Net Supply (pounds)

Commodity	Incoming by rail	Reported local production	Total supply available	Outgoing by rail	Net supply	Per cent from local sources	Per cent of dietary
Cereal	11,898,410	---	11,898,410	3,207,840	8,690,570	---	18.3
Canned goods	2,332,430	---	2,332,430	489,480	1,842,950	---	2.05
Dairy products (except milk and cream)	1,534,269	---	1,534,269	282,549	1,251,720	---	.53
Eggs	945,500	450,000	1,395,500	162,000	1,233,500	36.4	2.3
Fats	834,065	---	834,065	499,850	334,215	---	2.66
Fish	1,484,000	---	1,484,000	321,000	1,163,000	---	.96
Fruits	3,858,755	575,630	4,434,385	1,626,525	2,807,860	20.5	9.85
Meats	8,396,230	618,000	9,014,230	502,890	8,511,340	7.1	5.76
Milk and cream	(2,246,175)[1]	15,526,500	15,526,500	---	15,526,500	100.0	28.36
Poultry	200,500	155,000	355,500	16,000	339,500	45.6	.38
Sugar	4,776,485	---	4,776,485	528,745	4,247,740	---	3.6
Vegetables	9,998,885	1,833,870	11,832,755	2,111,545	9,721,210	18.8	25.12
Total	48,491,704	19,159,000	65,418,529	9,748,424	55,670,105	30.3	99.87

[1] Out of state but counted as local production and included in the total of 15,526,500 pounds.

farmers, although the amount can not be estimated. On the other hand, local production is of little significance in the demand for meat and for potatoes and onions.

Although the land about Fitchburg is well adapted to the production of certain vegetables and fruits, there are others which are not profitably grown in this vicinity. This group constitutes more than half of the estimated normal demand for fruits and vegetables. Certain other products, such as tomatoes, lettuce, and berries, are probably grown in sufficient quantities to meet the local demand, but the seasonal nature of the local supply makes it necessary to seek outside markets for a part of the crop. Probably poultry and egg production could be increased to meet the local demand, with proper distribution, since so large a part of the necessary supply is now derived from local sources.

The limitations of local supplies on the Fitchburg market are apparent, and probably Fitchburg may be taken as fairly typical of New England markets and communities generally. There is little question that, because of agronomic and economic factors, Fitchburg and other New England markets must expect to obtain more of their food products from distant than from local sources.

STATE EXTENSION PROGRAMS AND THEIR RELATION TO AGRICULTURAL RESEARCH [1]

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In a group like this conference everyone present, I am sure, has been a party to the making of an agricultural program in some form and will keenly sympathize with the modern agricultural apostle, who, beating his breast in desperation, might say, "Oh, that mine enemy would make a program." Why this tremendous effort at agricultural program-making? Is the disease or trouble or condition one that chiefly interests the doctor, or does it also afflict the patient? If the former only is concerned, we need not worry. If the latter is the need of all this probing, punching, pulse-taking, and tongue-looking; this charting, intent-to-live survey, and condition forecasting; then the whole public is indeed concerned.

The attitude of both the farmer and the public toward agriculture at present may be likened to that of the automobile tourist and the innocent bystander. With good roads, balmy air, beautiful scenery, the car purring softly and a goodly supply of fuel in the tank, the tourist may slump down in the seat, step on the gas, and care little where the day's end may find him. The car, as it spins by, to the bystander is just another one; but let the tourist suddenly discover that his gas is low, or let a loose connection send his car cavorting down the road, and both the driver and the observer are immediately interested. For the occasion, the one has advice and the other adjectives.

If we consider the man in the car as the farmer and the bystander as the general public, we have a replica of what has happened. The farmer has bowled along blithely for 100 years on a gas tank full of increasing land values. He was only remotely concerned with income so long as it afforded upkeep for his car. Something apparently has happened to our agri-

[1] This paper was read at the Sixteenth Annual Meeting of the American Farm Economic Association, held in New York, December 30, 1925.

cultural automobile to interfere with the placidity of its gyrations. It not only stutters in starting but, to use some early Victorian political Billingsgate, it "wiggles and wobbles." There are two general opinions as to what might be done under the circumstances:

(1) In the main, this is the driver's or farmer's point of view. He conceives what is needed is more gas or more cash to buy gas and less traffic on the highway.

(2) The bystander or the scientist's, the public's point of view, is that the driver needs a better sense of direction.

Both of these opinions are natural and logical, dependent on whether one is in the car or simply in danger of being involved in a smash and, to a degree, both are probably right. It is not necessary in such an audience as this to review the agricultural history of the United States. We will, perhaps, all agree that what may be termed the era of exploitation is over. As a matter of fact, it closed some time ago, but neither the farmer nor the public quite realize that "the old order passed and behold all things have become new."

The first plank in the new agricultural program is to help the farmer get a new attitude toward himself and his business, and the public to get a new attitude toward him. Some progress is being made, and it is here that the extension forces wish to make their first big request of the research people. We want the banker, the lawyer, the manufacturer, the merchant, the farmer—and, let me include and mention specifically, the extension worker, the agricultural economist and experimentalist—to get a new focus on agriculture. As we adjust our glasses, the subject in our field of view is going to become a little less picturesque, a little less poetic and sentimental, and a little more matter-of-fact; a little less the conqueror (for in the last analysis, the farmer of the past has been just that) and a little more, shall we say, the business man.

We all know what it means to get over a war. If it takes a decade to win back the thin veneer we call civilization, after four years of behaving naturally toward each other, we must perhaps be patient if it takes a generation or two to adjust ourselves to the new farmer as a business man after a hundred years' war with nature. Neither would I have the farmer

vision himself, nor us vision him, wholly as a business man. The farmer can not—must not—be permitted to take the cold-blooded, hard-boiled attitude toward his farm that the town business man is supposed to take toward his business. The home as the business office or ranch headquarters must, let us hope, continue to be something more than that. The farmer needs to think of the farm a little more as a source of reasonable income and the rest of us a little less as a source of cheap food.

We extension people need your help in assembling and organizing facts that will help get the city man into a frame of mind so he can again enjoy his dinner and, if we can, help lift table talk above the cost of bread, meat, and potatoes. In other words, have him cheerfully accept the fact that the days of cheap food are gone forever, and also help the farmer that he may get on a legitimate "cost plus" basis or get out. This lies at the basis of what we have to say.

Our future extension program should be something more than a country program. I think the new county agent is going to have town projects and that Chambers of Commerce, Rotarians, Kiwanians, Lions and other luncheon clubs will be organizations through which we will help the city man vision the farmer as a business brother with problems he can understand because they are identical with his own. Reducing overhead costs, lower production costs, cheaper handling and marketing costs, quality production, standardizing, advertising, taxation, quantity production to meet probable demands, to avoid glut and famine, are familiar terms to the city mind. What we need is material for this new kind of farm demonstration work which will find a place in the metropolitan daily, at full-dress banquets, in the lobby of hotels and banks, and at the women's clubs. The average city woman's idea of farm and country life is something grotesque and impossible. We need a new country ideal for city folks; new farmer characterizations that will in time produce something better than anything we have yet had, as the country short story, and the countryman in the movies.

We want therefore from agricultural economic research organized facts relating to the business of farming that can be

presented to city people and will win them to an appreciation of the farmer's place in the business structure. The town man is only passively interested in what we might call farming processes, i. e., in the methods of growing crops, or of raising animals, but he is directly and quickly interested in the cost of his breakfast and so is his wife. What we want you to help us do in this matter is essentially all we want, or perhaps I should say, gives color or vitality to a hundred and one other detailed things that we are going to ask of you. What we want in this connection, and in all others, is such an array and organization of facts as will make possible for the farmer and his extension coworker *clearer thinking, more accurate judgment, and more fortunate decisions.*

Extension work has, during the decade of its organized existence, passed through essentially the same evolution as organized agricultural research has during a much longer period. At first we were appalled or, shall we say, lost at the very enormity of the undertaking and its innumerable ramifications. Both research and extension had its period in the hit-and-miss work. In the research field this was manifest by the unorganized or poorly organized projects, detached, unassociated, uncoordinated, that began nowhere and got nowhere. Much of the early work of the stations later had to be done all over again. In extension work it was the day of direct personal service to the individual farmer—"trouble-shooting" it might be called. The county agent at this period was often likened to the old-fashioned country doctor, who eased the fevered brow but who did little to improve the general community health. To a degree this individual work is necessary and must continue to be a part of extension work.

There followed the period of organized projects and programs in both research and extension. Until recently these projects have had to do with processes of production almost wholly, or more accurately processes within enterprises. To illustrate, the research man was interested in compounding a mixture or developing a formula that would destroy some insect pest or control some plant disease or in the development of some new crop variety or principle of animal breeding—all to the end of increasing yields or improving quality. This had, of course, a thousand manifestations in experiment sta-

tion and department projects. The extension people took these discoveries out and demonstrated them and have done much in procuring the rather wide adoption by farmers of certain advantageous practices. Evidences of this coordinated effort of the research and extension forces are to be found in most counties and communities in our country.

True, we have at best made only a beginning. Agriculture is such a tremendous thing that our percentage of changed practices (to drop into extension jargon) is small, but a good beginning has been made, even if we do have a long way to go. We might have continued for a long time in this field if we had started our extension work a half century earlier; but it so happened that the impulse for agricultural extension came just at the close of the era of land exploitation. Perhaps the primal reason for the impulse grew out of this very fact. During this interesting era the forest, the prairie, the plain, and at last even the desert, had been conquered. A great transportation system had been developed. Machinery had performed its miracle, and a country almost wholly agricultural had become industrialized.

At last our farmer conqueror stood on the shores of our Western sea and for the first time turned and looked backward. Alexander-like, he may have remotely understood, there were no more worlds to conquer. He could no longer forage on the enemy. The day of pyramided land values, increased labor and production costs, high interest rates, increased taxes, had arrived. His business was highly competitive and less susceptible of organization. He bought high, sold low. The problem could not be solved by further land exploitation, though that had been and still is being employed. It called for intelligent, effective land utilization and the best use of resources that we had left. The problem was not altogether how best to do the things, but perhaps principally what things best to do. The turning back of our agricultural conqueror marks in agricultural research the beginning of farm management studies in the Department of Agriculture and the colleges, and recently what we have called farm management demonstration in the extension services. Whatever may be said of the quality of the work we have done in either the research or extension in this field, it is a tribute at least to

our understanding that we did recognize the problem, and did what Sir Sidney Hall pronounces to be a supreme test of wisdom and courage. "To grapple with the past and the future in the terms of the here and now"—what he calls "the power of presentification."

We stand, then, at the threshold of a new era, fraught with new occasions which teach us new duties. Fourteen years ago in a study of Ohio agricultural history we ventured to call the first period of the new era one of "reorganization," which might soon lead us into a period of "co-operation." I think you will probably agree we are still in the reorganization processes and that co-operation seems nearer and the prophecy perhaps less hazardous than when it was made.

It is this condition that gives an excuse for our present frenzy for agricultural and extension programs which we are undertaking almost with the zeal of apostles. To return to our simile of the agricultural automobile, our problem is no longer so much one of the mechanism of the car or even the skill of the driver, as it is now a road problem. If we have a good road ahead and it leads to the right market town, even a poor car and a careless driver can make some progress.

Notwithstanding the tremendous significance of our new problems, I would not suggest any lessening of attention to the problems of production or productive processes. As population increases and civilization advances, we will need constantly increasing production and constantly increasing quality. The world is going to need more and better food. We need to continue to travel along together on the well-beaten path of economic production in investigation and demonstration. Just because we have perforce suddenly become acutely economic-minded has not in the slightest decreased the importance of maintenance of soil fertility or the mutation of plants and animals.

During the past four years in a few states, the extension forces collaborating with the departments in the agricultural colleges and experiment stations have been trying their hand at fact organization or program-making. The extension service had for years been assisting the development of so-called county and community programs of work—all very well

in their way, particularly as psychological aids in getting commonly accepted needs attended to. They have been, and are, important. Many of them were hardly deserving of being called programs. They have been largely the mere cataloging of apparent community agricultural ills and the application of some recognized remedial agency. This work with the simple and the apparent must continue to be a large part of extension effort.

In this work there has been no thorough diagnosis, almost no assemblage of facts, upon which to base action. These, in common with some more ambitious undertakings in the program-making field by individuals and associations, have been largely an organization of opinions and hunches, followed by a propaganda of theory rather than an orderly assembly and organization of facts, and the charting of an agreed course of procedure. So long as we were dealing with processes within the enterprise it was comparatively easy and safe to so construct our program; but we have been forced out of this fairly well explored field, where opinion was based to a considerable degree on experience, into the almost uncharted sea of agricultural economics, where mere opinion, even of our most careful thinkers, can easily prove dangerous, and agricultural forecasting become an extra hazardous enterprise.

One may safely prescribe an application of Paris green for potato bugs and with reasonable safety predict plants free from bugs if the poison is used as directed, but venturing to state the conditions under which potatoes should be grown, the acreage in relation to other crops, and to recommend increase or decrease in acreage in a particular year, is quite a different matter. Yet it is just this latter information that our new farmer wants to know, and indeed must know, if he is to operate successfully. This has developed the necessity for a new kind of program-making.

The new experiment in program-making as an extension enterprise had its beginning in the West where it is proceeding on both a regional and a state basis. There are many reasons why it originated in the West. Perhaps this part of our country is somewhat less tradition-bound, somewhat more venturesome, and also, be it remembered, when our agri-

cultural conqueror reached the shores of the Pacific and faced about, the West was his immediate foreground, the marks of recent carnage were still visible. The middle country and the East and the South had grown more or less callous to the work of the despoiler. The farther east we come the greater the disposition to accept. The West is the land of protest. A protestor to be effective needs a program. In any case the movement began there, and my connection with it has been wholly in that region. The exhibit which follows is drawn largely from that experience.

West of the 103d meridian, which may be called the eastern boundary of where the West begins, the production of range livestock has been, is, and must continue to be the predominant industry. Slow economic changes brought to a crisis by the aftermath of our participation in the World War left this industry in a deplorable condition. A hundred voices were clamoring as to what should be done. There was an acrimonious clash of opinion based sometimes on selfish interest. Many conferences were held; legislation both wise and unwise grew out of it. The problem, however, remained. The state extension forces of this group of 11 states thought it might be worth while to develop the facts, the scientific, statistical, and practical facts, relating to the livestock industry, cataloging, indexing, classifying them, laying them on a table and looking them over, and in a thoroughly detached attitude perhaps suggest what they might mean. They thought it well to look at the facts and to develop their philosophy afterwards instead of the reverse process which has so much held back our social, economic, and political progress.

By this effort it was hoped to find out what new facts were needed to properly appraise the problem. There is no time here to go into any detail in regard to the method of procedure or results. It is cited as a first attempt in a new field and a passably successful one. It did disclose some lamentable holes in the available information, and the bare outlines of the real problems began to appear. This attempt at fact organization has served as a basis of the succeeding attempts of what I think is unfortunately named "state program-making" in several of the western and a few other states.

Program development on a state basis was first undertaken as a coordinated effort of the agricultural college, experiment station, and extension service in the State of Oregon in 1923. Extension Director Paul V. Maris of Oregon presented this subject in a paper before the extension section of the Association of Land-Grant Colleges in Washington, in 1924. This effort is now in some stage of development in each one of the 11 western states. The movement has spread to several of the central, eastern, and southern states, particularly Arkansas, Georgia, Illinois, New Hampshire, New Jersey, Ohio, South Dakota, Tennessee, and Virginia.

The western effort was at first almost wholly, and still is largely, a fact-collecting, fact-organizing, rather than a fact-interpreting effort. This is consistent with what I believe to be the correct extension attitude. In our work in the production field we have given advice or made the demonstration, leaving it to the voluntary action of the farmer to accept or reject. This is the only consistent attitude for the teacher. If this is true in the field of production, it is doubly so in the field of agricultural economics. The extension service feels that it may take part, perhaps lead, in acting for the farmer as a fact-assembling or fact-organization agency. The facts the farmer needs to know if he is to act intelligently often exist but are isolated, detached, unrelated, and widely scattered. Truths are often only half truths or even untruths until they are related. It is our duty, as we conceive it, to gather these facts together and put them in some orderly arrangement for the farmer's study. Perhaps we should stop there. At least the next step should be taken in cooperation with the farmer, counseling rather than directing him.

If, after gathering and polishing our building blocks, we have at times been tempted to play with them a bit ourselves, we should be perhaps forgiven. Those who scoff at the amateurishness of our effort need not greatly worry. A program is at least harmless until it is followed, and it is not effective until many, perhaps more than half of those for whom or by whom it is set up follow it. Anyone who knows farmers will not be alarmed, and we are neither suggesting nor expecting revolutionary changes.

The purpose of this paper is to set forth briefly some of the facts which our efforts thus far have indicated we need. Where have we short-circuited?

(1) *Taxation:* We need a lot of facts in regard to the taxation of farm property. I mean facts, not dissertations for or against existing systems or theories. There is little difference between a system whereby the state owns the land and charges the operator a rent, and a system of individual title-holding where the owner of the paper title pays a tax as great or greater than the rental value of the land. With our present system of nominal land ownership and increasing tenant operation, how and in what proportion should farm land and other farm property contribute to the expense of the Government?

(2) *The Tariff:* We need to know the truth about the tariff. It is perhaps too much to expect it will ever become other than a political question or that any investigation or study can be carried through that will be accepted as other than political propaganda. As an economic question it profoundly affects our agriculture. At present the only thing I can suggest would be a tariff commission composed of Martians. Perhaps if it were possible to have such a committee and they should make a truthful report, it would be immediately printed as a Democratic or Republican campaign document. But we do need the facts and a permanent policy founded on them.

(3) *Land Tenancy:* We need to know the facts as to land tenancy, whether the state or individual be the landlord. Tenancy is apparently increasing. Will the tenants largely become owners, or will ownership operation practically disappear? We need to quit sentimentalizing over the question and get at some facts in regard to what is likely to be a permanent system and the relation of tenancy to the type of agriculture, to production, marketing, and so forth.

(4) *Credit:* We need to know more about credits; credit for the purchase and operation of land; the influence of doles, amortizations, moratoriums, seed loans, livestock loans; the functions and duties of the public and the private creditor, and the relation of credit to land settlement and farm operation.

(5) *Land Utilization:* We need to know better to what use

the land should be put. We still have much traditional or historical use. We need to know our balance of woodlot, prairie, and crop land. We need to know what are marginal lands and to quit trying to farm swamps and deserts. We need a public land policy founded on facts rather than traditions. We need the facts regarding irrigation development. We need to know a lot about enterprise adaptation. Perhaps the right crop ultimately gets on the right land, but there is a lot of grief in the finding-out process. Land ought to be devoted to its best use both for the sake of the producer and the consumer. The consumer can not and should not pay for uneconomic production. Square pegs in round holes are as bad in agriculture as elsewhere. How can we have a selective process in land settlement and avoid some of the present expense of the elimination of the unfit?

(6) *Population Development:* We need more assembled data in regard to increment of population in both producing and consuming areas. If a competing production area has grown up, is static, that is one thing. If it is steadily or rapidly expanding that is quite another thing in determining the possible extent of an enterprise or its place in an agricultural program. We need the same information in regard to both the local and distant consuming areas for each particular product. We have found reliable facts of this kind exceedingly difficult to get.

(7) *Statistical Organization:* We need some sort of statistical clearing house. Statistics of all kinds are being collected and surveys made covering almost every subject and human relation. These efforts are being made by both public and private agencies. Much of the value of the effort is lost because those who need to profit by the material do not know of it, and those who make the surveys do not use it. New and costly projects are started to develop fields already exploited. Often in our program-making efforts we have come to what appeared to be a great void and afterwards and purely by accident have found just the statistical data needed. In this the right hand not only does not know what the left hand is doing, but the fingers of each hand appear to work independently. What I have in mind is something in the nature

of a statistical bibliography. If being educated is simply knowing where to find information when it is needed, then some of us must often admit ignorance.

(8) *Insurance:* We need information in regard to the possibilities and economy of agricultural insurance. The farmer now takes risks by the very nature of his business; tornadoes, hail, frost, drouth, plant and animal diseases, insect pests, rodent and predatory animal depredations, temporary labor shortage, overproduction, to mention only a few. Many of these are beyond his control, either individually or collectively. What can be done? What are equitable premium rates for the various risks? What can the state do in the way of giving security and confidence without destroying individual vigilance or encouraging laxity? To us in the West this is a question of great importance.

(9) *Change in Food Habits:* Are we losing our canine teeth? Do we no longer appreciate prime, first quality steaks and lamb chops? Have we grown so accustomed to "cat meat" that we think it is good? If true, it intimately affects the whole livestock industry and the allied field of crop production. If the market for quality meat is declining or disappearing then our whole extension emphasis on quality production and breed improvement is wrong. Are we developing a chicken complex? Are we becoming vegetarians? Note, for example, the enormous increase in the consumption of head lettuce in the past few years. How far will it go? What food is it supplanting? Just what would become of us and what would we look like if we followed all the "eat more" and "drink more" campaigns?

(10) *Cost Studies:* We need better organization of cost studies to get at the various costs of products in competing enterprise areas, both in the domestic and foreign field. We need perhaps somewhat less emphasis on average costs in particular areas; somewhat more attention to a study of those methods that have obtained low cost production for each enterprise in each area under study. If cost studies are to greatly help us in program development, we must know the extent to which inefficient or wasteful farm practice, wrong type production or farm organization influences the statistical

data. We need a great multiplication of studies of this kind. There are wide gaps in our available and reliable data in cost production.

(11) *Farm-Management Studies:* We need more study of what we already have of farm-management investigations. Especially, we need such a study of farm-management data as will more particularly develop the why and how back of the average—the 10 best and the 10 poorest. When our farm-management survey has located an efficient group we should not be satisfied with simply knowing such a group exists, but get at what is back of the low labor cost, the better organization of enterprises, quality of production, and size of business. In the high cost group we need such an analysis that we may be able to say with more assurance, "This one thing thou lackest." We can not influence the lay mind by averages, tables, diagrams, maps, and graphs. What we need is to know what is the real kink that turns the trick. If in our studies we can locate that, we extension folks need not put the farmer to sleep with statistical data, which we ourselves do not understand, nor dazzle his eyes with charts having most beautiful color schemes, but with no practical lessons that he can follow. Only a small per cent of the people can follow an abstract presentation and a much smaller percentage can profit by it. Help us lay extension workers to know what is back of the figures. Do not leave us at the end of the thesis staring at a differential X.

In this paper we have only incidentally touched the home program and the demands it is making. That is a whole subject by itself. The social and economic programs are closely interwoven and must go along together if we are to preserve the best we have in rural life, avoid the yawning chasm of rural stagnation and decay, and advance to a constantly rising standard of satisfying country living.

THE RADIO AS A MEANS OF DISSEMINATION OF ECONOMIC INFORMATION [1]

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Radio is a permanent important addition to our means of dissemination of economic information. The newness of the acquisition presents some special problems and we must give these careful consideration to insure ourselves that the new advantages may be fully realized on. Present development of the radio staggers the imagination and the future of radio development reaches far beyond the imagination but the facts are that 10 per cent of the farmers, the best farmers in the land, have radio receiving sets and other farmers are rapidly getting them. The radio supplies a powerful and effective vehicle for the dissemination of agricultural economic information.

If radio is to be considered as a vehicle, let us consider the cargo. Radio has the nearest analogy in the newspaper, and a radio station operated primarily for farmers is confronted by problems similar to those presented to farm papers. Radio, like the farm paper, has its editorial, circulation, and advertising problems. Advertising in the better class of stations is confined to the name or operator of the station. The circulation is the volume of listeners, and this is controlled by the power and quality of the station and the quality of the program. Programs are like farm papers. They must not only amuse but serve. Educational material such as economic information must compete with entertainment, jazz, grand opera, and other features. To compete successfully, economic information must be prepared and presented in such a way that people will not be tuned out when it is put on the air.

Let us suppose that we are in the studio now. Here is an article prepared for radio use and comes from the United States Department of Agriculture. At WLS we have done some experimental work in methods of broadcasting and found that the same material presented in one way will go

[1] This paper was read at the Sixteenth Annual Meeting of the American Farm Economic Association, held in New York, December 30, 1925.

over while presented in another it will fall absolutely flat. The information has to be humanized, livened up, simplified, and presented so that people retain their interest in the message you are trying to get over to them. The problem of the correct method of distribution of the economic information over the radio has given us considerable concern. In order to arrive at some conclusions we have made some surveys to determine what the conditions were in the field and what the farmers actually wanted in the way of agricultural economic information.

As a result of a survey covering 1,176 radioized farms in seven States—Illinois, Wisconsin, Indiana, Iowa, Michigan, Ohio, and Missouri—we found that the average distance between sending station utilized and the farm making use of the information was 138 miles, and that an average of four people to the family made use of the radio. Of the radio sets on the farm, 73 per cent were factory made and 27 per cent home made. One-half per cent were crystal sets, 3.1 per cent one-tube sets, 4.3 per cent were two-tube sets, 28.5 per cent were three-tube sets, 21.9 per cent were four-tube sets, 36.5 per cent or over one-third were five-tube sets, 4 per cent were six-tube sets, 0.6 per cent were seven-tube sets, and 0.6 per cent were eight-tube sets. We found that 91 per cent have loud speakers and that 9 per cent use ear phones exclusively.

So much for the equipment at the receiving end of the line. We endeavored to find out what the farmers were interested in—what economic information they wanted from a group standpoint. We found that 35 per cent preferred reports on grain, grain markets, and so forth; 28 per cent showed a preference for livestock reports; 27 per cent for dairy and poultry; and 10 per cent for fruit, vegetables, hay, and feed. An analysis of those people who desired information on livestock showed 39 per cent preferred reports on hogs, 29 per cent on cattle, 17 per cent on sheep, 8 per cent on wool, and 7 per cent on horses. An analysis of those farmers who preferred grain reports revealed that 30 per cent preferred reports on corn, 29 per cent on oats, 25 per cent on wheat, 8 per cent on rye, and 8 per cent on barley.

Of those farmers who were primarily interested in dairy and poultry, 33 per cent preferred reports on the live poultry

market and situation, 30 per cent on eggs, 19 per cent on cheese, 13 per cent on dressed poultry, and 5 per cent on butter. Of those who were interested in fruits, vegetables, hay, and feed, who were greatly in the minority as was previously noted, 40 per cent were interested in the hay market, 36 per cent in feed market reports, 10 per cent in apples, 10 per cent in potatoes, and 4 per cent in others. As a result of this survey we learned that the ten most important commodities about which farmers desired to receive information over the radio were, ranking in order of their importance, hogs, corn, oats, live poultry, eggs, cattle, wheat, cheese, sheep, and dressed poultry.

We endeavored to ascertain just how the farmers who received these reports made use of them. A very interesting thing was that none of them were taking the precautions to tabulate or record any market reports, except that 28 per cent reported that they made the substance of the report known to others who did not have radios but who could use the information. Of those people who were making shipments regularly and irregularly to market, 97 per cent who have radios depend on radio information to determine the time of shipment. The importance of the radio to the livestock shipper was shown by the fact that of those reporting as making shipments depending on radio information, 70 per cent were livestock shippers, 19 per cent were grain shippers, 9 per cent were shippers of dairy products, and 2 per cent were shippers of fruits and vegetables.

Among the questions on which we were interested to obtain information were the relative values of commercial wires as compared to radio information. We found that 93 per cent preferred radio reports to commercial wires, while 7 per cent preferred commercial wires as a basis of making shipments.

One of the important features of the work put out by the United States Department of Agriculture and issued as a radio report is the advance livestock estimate, that is, the carloads of livestock loaded and which will be received on the market the following morning. We found that 87 per cent of the livestock men made use of the advance livestock estimates, while 13 per cent did not make use of them.

Radio is new and we do not know much about it yet. The time of day when farmers show greatest preference for business information is of interest. It became quite evident that the preference was for either the noon or evening hour, and in comparing these two we found that 88 per cent preferred the noon hour as compared to 12 per cent the evening hour for receiving market or economic information.

Of the many different subjects on agricultural economics, market reports are of greatest interest to farmers. We were anxious to find out how far or how deep they wanted to go into this matter of market conditions and factors affecting markets. We found that 70 per cent were interested in world markets, while 30 per cent were not. Here is an interesting thing: Ninety-nine per cent wanted outlook or forecast talks on different markets, while 1 per cent were not interested in this. This, it seems to me, is an overwhelming majority in favor of outlook or forecast talks.

What does all this mean to the farmer? It means millions or billions if he uses it to the fullest extent of its possibilities. We asked this specific question: "How many have actually saved money as a result of information they have received over the radio?" Ninety-seven per cent claimed that the radio has saved them money, and 3 per cent could make no such claims. Ninety-one per cent mentioned specific money-saving instances. The average saving effected by those for whom the radio had saved money was $267.56. If the average farmer who has a radio only saved $250, and if over five million out of the six and a half million farmers in the country had radios and used them, this would be an economic saving to the farmers of a billion and a quarter annually. That would buy a few radio sets.

Summarizing the situation, the farmers are getting radio sets not only for pleasure but for business. As a result of our survey we found that 99 per cent want outlook talks or forecasts. These must be accurate, reliable, practical, and acceptable. The presence of the demand is definite, and it is up to the agricultural economists to see that the demand is met.

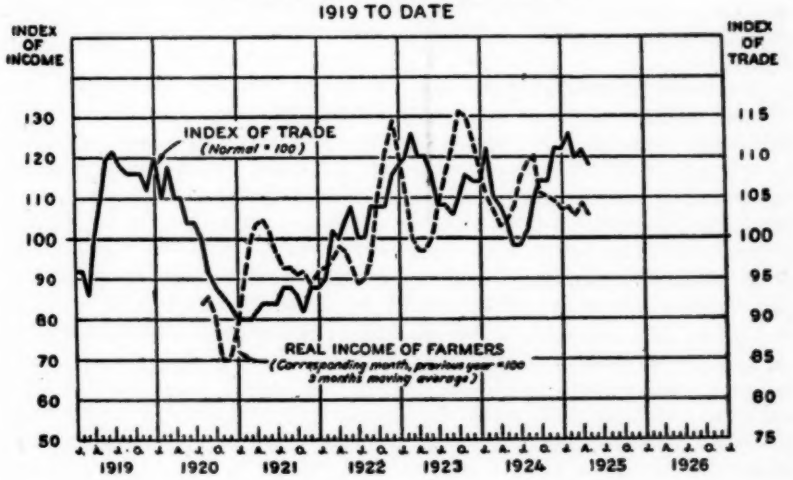
NOTES

A Criticism of the Index of Farmers' Real Income

Mr. Bean's paper on "Measures of Agricultural Purchasing Power," published in the *Journal of Farm Economics* for July, is for the most part excellent. It contributes much to clarify a subject in which much confusion has existed. At one point considered briefly in its concluding pages, however, it seems to the present writer to be open to criticism. The current importance of the subject is such as to warrant a friendly expression of this criticism.

The chart on p. 370, here reprinted with title and explanation, is seri-

REAL INCOME OF FARMERS
AND
THE TOTAL VOLUME OF TRADE
1919 TO DATE



ously misleading. It seems to present a monthly index of farmers' real income that is comparable with Snyder's monthly index of the physical volume of trade. It seems to show an upward trend of this real income from late in 1920 to late in 1923, and its fluctuation on a level well above normal from late in 1922 until early in 1925, the close of the period covered. It seems to show, as indeed the accompanying comment definitely implies (though in it the words "farmers' cash income" are used), "a remarkably close relationship" between monthly variation in farmers' real income and the physical volume of trade, with the former preceding the latter. It seems to afford striking evidence of intimate dependence of business upon agricultural prosperity. The uncritical reader can hardly fail to get these impressions, yet I venture to submit

that all are erroneous, and that even Mr. Bean's stated inferences are in part unwarranted.

The fundamental error lies in the fact that the index of farmers' real income is not what it appears to be, and is in no way suited for direct comparison with an index like Snyder's. Gross cash income from marketings, even assuming the data are trustworthy, is not proper material for computing an index of the real income of farmers,[1] however useful it may be for a series to be compared with series showing general business activity. Adjustment by the index for non-agricultural prices at wholesale is a very crude method of translating farmers' money income into real income. The method of adjusting for seasonal variation by expressing each monthly figure as a percentage of the similar figure for the same month of the preceding year is exceedingly defective. More important, however, than any of these is the fact that the index is not, like Snyder's, expressed in terms of an estimated normal or even in terms of a fixed base; rather it is one of the most elusive types of index, referred to a constantly shifting base,—that of the same month in the preceding year.

A true index of farmers' real income, if it could be obtained by months, might well show something utterly different—probably a sharp decline in 1920-21 and a slight additional decline extending into 1922, to a lower point than any shown on the chart, followed by a fairly continuous recovery (by no means at a uniform rate) into 1925, to a level in 1924-25 around normal or perhaps somewhat above. This I infer (admittedly on no very substantial basis) in part from a study of the chart, in part from other data that Mr. Bean presents,[2] and in part from other information. It would show, I am strongly disposed to believe, that recovery of the volume of trade preceded the improvement of farmers' real income by a year or more; that the recovery of farmers' real income continued during the period from late in 1922 until the middle of 1924, when the physical volume of trade was tending downwards; and that, despite its advance, farmers' real income was below normal throughout a considerable period in which the physical volume of trade was above normal.

We may indeed conclude that the increase in the farmers' cash income since 1921-22 has contributed to the industrial recovery and the high level of business activity in recent years, that the physical volume of trade is influenced by the physical volume of farm marketings, and even that there is a real but as yet unmeasured relation between fluc-

[1] Cf. Warren and Pearson, in *Farm Economics*, June 10, 1925, p. 287: "It is a strange economic theory that assumes that the prosperity of an industry is measured by the purchasing power of the gross cash value of the product;" and C. F. Clayton in *Journal of Farm Economics*, July, 1926, p. 354.

[2] For example, if one "deflates" the Department of Agriculture data for net income of farmers per farm (p. 368) by a July-June annual average of monthly figures of the Department's calculation of the wholesale index of non-agricultural commodities on a 5-year pre-war base (admittedly a crude procedure), one gets the following figures for "real net income" per farm in the crop years since the war, in terms of 1910-14 dollars:

1919-20	550	1922-23	396
1920-21	349	1923-24	465
1921-22	342	1924-25	542

tuations in farmers' real income and general business activity; but these conclusions are by no means identical with Mr. Bean's.

The simple fact is that no one has yet published a serviceable monthly index of real income of farmers, if indeed such an index is possible. The peculiar type of index here employed may justify itself in the statistician's office as a preliminary device for discovering relations between agricultural marketings or prosperity and general business activity, and for suggesting profitable ways of exploring these relations further. It might appropriately be published, with a correct title and a carefully guarded explanation, as a tentative contribution to the study of these relations for the benefit of other investigators. But it is exceedingly unfortunate to have it appear as a true index of farmers' real income, comparable with indexes of common types, and to have the text comment fail to correct improper inferences of large import.

If these criticisms are well-founded, they have a special pertinence. Mr. Bean's paper is designed to clarify thinking in a domain in which there has been a vast amount of abuse of statistics; yet in this particular he leads his readers astray. Furthermore, the identical chart, credited to the Department of Agriculture, is printed as the frontispiece of the National Industrial Conference Board's recent report on *The Agricultural Problem in the United States*, which has been given wide publicity. The Board failed to note that the curve conveys the impression of a much more favorable status of the farmer than its own investigation disclosed; but the curve apparently contributed substantial support to the Board's thesis regarding the intimacy of relationship between agricultural and industrial prosperity. As a matter of fact, this relationship is exceedingly complex, and serious analysis of this important subject has barely begun.

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REJOINDER

Mr. Davis' main criticism appears to be that in the comparison between changes in farmers' "real" income and changes in the total volume of trade, I have used a "most elusive" type of seasonal adjustment and have consequently arrived at inferences which are not warranted. The simple rejoinder to this is that the same inferences as to the relationship between farmers' income and the total volume of trade since the bottom of the depression are warranted even when the original data are adjusted for "normal" seasonal variations, determined by the accepted less elusive methods.

The several points raised by Mr. Davis appear to group themselves into the following general questions as to:

1—The adequacy of the data used as a measure of farmers' real income.

2—The adequacy of the method used in adjusting the data for seasonal variation.

3—The correctness of the implied or stated conclusions.

It should perhaps be pointed out here that the chart under criticism was included in my paper to illustrate a certain point, and that no elaborate description or discussion was necessary or could have been undertaken in an address (limited to ten or fifteen minutes) on a much broader topic.

Those who may desire the basic data representing farmers' income are referred to *Crops and Markets, Supplement*, September, 1925, p. 303. We published there for the first time estimates of the monthly money incomes of farmers derived from marketings from July, 1919, through June, 1925. These monthly incomes were also shown in terms of pre-war non-agricultural wholesale prices and, for want of a better title, were labeled "Real Money Income of Farmers," the word "money" being retained to indicate that only the cash portion of the farmer's income was under consideration. In the chart criticised by Mr. Davis these "deflated" money incomes were expressed as percentages of the corresponding months of the previous year. So much for the source of the basic data.

Their adequacy need not here be argued. They represent the first estimates by months by the Department of Agriculture of the money value of farmers' marketings, that part of farmers' income which is directly related to the exchange of goods and services between agriculture and non-agricultural enterprises. Although the estimates of money income by months may possibly be improved, for the present none other are available for our purpose.

The index of the total volume of trade, computed by Mr. Carl Snyder, of the Federal Reserve Bank of New York, is essentially a measure of non-agricultural activity. It is by far the most comprehensive index of trade, being composed of a number of commercial, financial, and industrial series which may be affected by agricultural conditions. Although farm marketings are also included or represented, they exercise so small an influence in the composite index that it is practically 95 per cent non-agricultural.

The adequacy of the index of non-agricultural prices, and its limitations, I have already indicated on page 365 of this Journal (July, 1926) and it need not here be repeated. I heartily sympathize with Mr. Davis' desire for "a true index of the farmers' real income," whatever that may be. But for the present we are limited to the use of the most tangible and important part of it, namely, the cash income from marketings.

The adjustment made for seasonal variation may well be questioned inasmuch as it is not usually employed, but this in itself does not invalidate its use. Considered technically the adjustment used is the

extreme type of a variable seasonal adjustment.[1] Its opposite extreme is the usually accepted but arbitrarily constant adjustment for "normal" seasonal variation as determined by the link relative[2] or some more simple method.

It is obvious, in the first place, that no "normal" seasonal variation can be determined from farm income data which are limited to that most abnormal period, 1919-24. Secondly, in the search for relationships between economic data, one cannot be bound by the methods of seasonal adjustment that happen to be employed or preferred by any one school of economists or statisticians. The choice of method should take into account the nature of the data as made available to or as known by those whose reactions are under investigation. In this case it is desired to study the reactions of the business community as a whole to the changes in the farmers' money income. We know that the average business man who is concerned with agricultural buying power does not have available any definite measure of the farmers' monthly income adjusted seasonally and for trend by any of the usually accepted methods. What he probably does have available are certain data on changes in crop prospects, in prices, and in marketings and each of these is generally compared by him or for him with the corresponding data of the previous year. If he adjusts his plans according to these data at all, it must be an adjustment on the basis of these simple comparisons only, translated into terms of his ability to sell more or less goods in the farm areas. Might it not then be possible that data on farmers' income, adjusted for seasonal variation by comparing with the corresponding month a year previous rather than by some fictitious "normal," more accurately reflect the response of the business community to the information as it knows it? We can not therefore agree with Mr. Davis that to compare two series of data they must both be adjusted in exactly the same way and that results obtained by any other adjustment are necessarily erroneous and misleading.

Mr. Davis charges that my stated inferences are in part unwarranted and that the uncritical reader can hardly fail to get erroneous impressions. The only inferences that I stated and would state again are that the buying power of the farmers' cash income since the bottom of the depression formed a substantial basis for the industrial recovery of 1922 and subsequent high activity and that changes in the farmers' buying power tended to precede changes in the total volume of trade. For any other inferences, particularly as to trend of farm income and as to the farmers' prosperity, the reader himself must take responsibility.

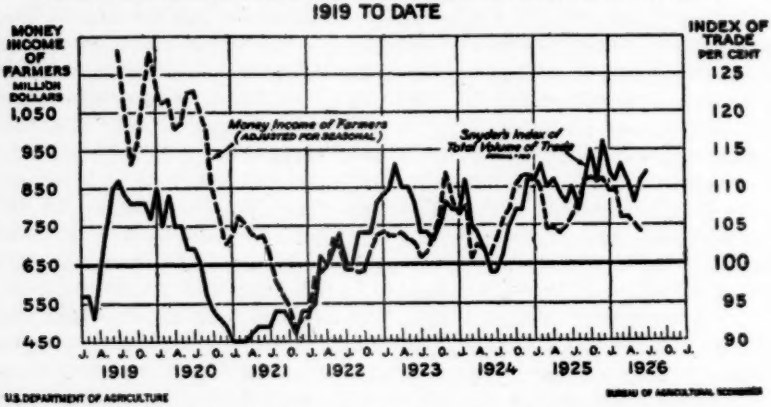
The accompanying chart substantiates my "stated inferences." With an additional year's data on money income now available, it seems more reasonable to attempt an adjustment for a constant "normal" seasonal variation. In this chart the original estimates of money income

[1] Suggested by Dr. W. I. King in the *Journal of the American Statistical Association*, September, 1924.

[2] Used by the Harvard Committee on Economic Research.

from marketings are adjusted only for seasonal variation.[3] We have here again fluctuations in money income since 1921, corresponding in a large measure with fluctuations in trade and tending to precede the

MONEY INCOME OF FARMERS AND THE TOTAL VOLUME OF TRADE
1919 TO DATE



latter. The same observations hold when this type of seasonal adjustment is applied to the income data expressed in terms of goods.[4]

Our studies have not progressed far enough to permit a final quantitative statement as to the effect of money or "real income" from marketings on business activity in general. It is quite likely that the relationship varies from period to period and that in some years industrial conditions affect agricultural income more than the latter affects industrial activity. During the past four or five years, as is evident from either of the charts, the direction of the relationship is almost unmistakable. Nor is the degree of relationship insignificant.

In the case of farmers' money income adjusted for both price changes and the variable seasonal,[5] with a three months' lag in the index of trade, the coefficient of correlation of .73 is obtained for the four years following July, 1921. In the case of money income adjusted only for "normal" seasonal variation with a lag of two months in the index of trade, a coefficient of correlation of .71 is obtained for the four and one-half years since January, 1922. These coefficients, as ordinarily interpreted, suggest that approximately 50 per cent of the variations in trade may be accounted for by the variations in the farmers' money income irrespective of the way they are adjusted. One can hardly be accused of overreaching the mark for inferring from these comparisons that agricultural income has played an important part in our commercial, financial, and industrial activity since the depression of 1920-21.

On the basis of the evidence in the accompanying chart and in the

[3] As determined for the years 1920-25 by the link-relative method, after eliminating a 12-month moving average trend. Beginning with July the seasonal percentages are: 91.2, 102.2, 126.1, 150.3, 124.5, 108.5, 97.9, 81.3, 84.2, 74.1, 80.7, 78.5.

[4] That is, when deflated either by the index of non-agricultural prices of the Bureau of Labor Statistics or by Snyder's index of the general price level.

[5] This is the series criticised by Mr. Davis.

income data adjusted for price changes, I would further disagree with Mr. Davis on some of his speculations: (a) The low point in farm income was reached in the fall of 1921, not in 1922. (b) The low point in the total volume of trade, it appears, was reached early in 1921, but this fact is not unrelated to the temporary recovery in farm income early in 1921 (this temporary recovery appears more marked in "real" income from marketings than in the money incomes shown here). (c) The farmers' income may or may not have been below normal during the period when the volume of trade was above. The fact is that our data are limited to the post-war period and we do not have a proper "normal" for farm income, in the sense that normal (long time trend) is used in the indexes of trade.

Finally, the present writer cannot accept full responsibility for the erroneous impressions of uncritical readers. It may be granted that the chart under criticism could and should have been more adequately labeled. A more exact title might be "Changes in Farmers' Real Income from Marketings." Yet we did attempt to warn the reader against getting the impression that the income curve fluctuated "on a level above normal from late in 1922," by indicating on the chart that in the index of trade 100 represented "normal" while in the index of income 100 stood for the corresponding month of the previous year. As a further caution we inserted a fairly detailed explanation at the bottom of the chart.

L. H. BEAN.

Bureau of Agricultural Economics,
United States Department of Agriculture.

EIGHTH ASSEMBLY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

The United States was represented at the Eighth General Assembly of the International Institute of Agriculture at Rome by Professor Asher Hobson, Delegate of the United States and its Dependencies to the Permanent Committee of the International Institute of Agriculture; Mr. L. J. Taber, Master National Grange Patrons of Husbandry; Dr. J. G. Lipman, Director of the New Jersey Agricultural Experiment Station; Mr. S. T. Dana, Dr. R. A. Oakley, Dr. O. C. Stine, and Dr. C. J. Galpin, of the United States Department of Agriculture; Dr. R. A. Pearson, President of the University of Maryland; and Mr. E. A. Foley, Mr. W. A. Schoenfeld, and Mr. G. C. Haas, Representatives of the United States Department of Agriculture in Europe. Dr. A. R. Mann of Cornell University participated unofficially in the preliminary conferences of members of the delegation.

The actions of the General Assembly of 1926 relating to agricultural statistics may be of general interest. The Assembly:

Approved in principle a standard form for taking the proposed world agricultural census of 1929-30;

Expressed its conviction of the need for extending and developing the statistical work of the Institute and for collecting and distributing information as promptly as possible;

Asked the Permanent Committee to consider the best means for the further development of statistics of milk products;

Approved the action taken by the International Institute of Agriculture in obtaining statistics on wool on uniform principles in the different countries, inviting governments and associations representing the interests of the wool producers to take such steps as are required for the collection of data on production, trade, stocks, and consumption of wool.

The Assembly requested the Permanent Committee to consider the preparation of a general plan for estimating agricultural production on a comparable basis as between different countries;

Recommended that the Institute develop statistics of tropical products, including statistics of production and trade, and invited the Forestry Congress to consider the collection of statistics as to the world's forest resources and to make recommendations for the guidance of the Institute for the development of statistics in this field.

In the past few years the Statistical Bureau has made great progress in the handling of statistics of production. The cable and telegraphic service, in collecting and distributing reports of condition and forecasts and estimates of production, has tied the activities of the Institute into the business of the world as it was intended by the founders that it should be. Little has been done, however, in developing market information concerning agricultural products. Trade, price, and freight-rate information is collected by wire and by mail, but is distributed only through the bulletins published by the Institute. In the main this information is of value only in research work. It has limited value even to research workers because of the fact that for careful research it is preferable to have the original sources.

Other resolutions are also of interest. It was recommended (1) that the Bureau of Economic and Social Conditions undertake the collection and distribution of information regarding the effects of surpluses of agricultural produce upon the markets and the social consequences which result therefrom in case of a dangerous fall of prices; (2) that a detailed inquiry as to a "scheme for a general inquiry into the marketing of agricultural produce" should be made by the Permanent Committee; (3) that a "scheme of inquiries on a uniform plan to be carried out by the various states regarding agricultural economic conditions" be drafted by the Institute; (4) that a committee or committees of specialists be formed "to study problems relating to agricultural education in the villages, the embellishment of rural life, and the part played by the woman as a farmer's helpmate, as housewife, and in the training of her children," and (5) that the Permanent Committee give effect at the earliest possible date to the scheme which it has adopted for direct cooperation with the Agricultural Associations through the medium of the Permanent International Commission of Agricultural Associations.

These resolutions cover a very wide field; with the present funds and

personnel some of these projects will not be developed very rapidly.

The activities of the American Delegates were mainly directed to the formulation and adoption of a statement of principles to be observed in the organization and operation of the Institute. It must remain an international Institute and it must be operated as a scientific institution. To receive proper recognition the Institute must have a staff of well trained, able, scientific men who command the respect of the world in their respective fields. The American delegation formulated and secured the adoption of the following statement expressing this viewpoint:

(a) The self-governing character of the Institute, the maintenance and development of its status as a technical institution, make it necessary that all business concerning the Institute be exclusively dealt with by the authorities constituted in accordance with the Convention of 1905, which provides that the General Assembly shall exercise supreme control over the International Institute of Agriculture.

(b) The Permanent Committee should observe the decisions of the General Assembly by confining itself to the outlining and developing of the policy of the Institute in accordance with the principles laid down in the Convention and carried into effect by the General Assemblies.

(c) Since the President of the Institute is also the President of the Permanent Committee, it is understood that his powers and attributions do not include, over and above those laid down in the Convention and in the Statutes, both the latter as interpreted by the General Assembly, executive functions other than those with which the Permanent Committee is endowed.

(d) Responsibility for carrying out the decisions outlined and approved by the Permanent Committee should be entrusted to an official, namely, the General Secretary, who is not the representative of a Government, but who is employed by and fully subject to the control of that Committee.

(e) It is necessary to preserve the international character of the Institute by considering the means likely to secure that the staff is as far as possible international. In this connection the recent policy of the Permanent Committee should be definitely continued.

(f) The steps taken by the Permanent Committee to secure the nomination to the chief posts of a larger number of specialists, recognized authorities in their particular spheres, should be extended as far as possible in order that the services of the Institute may gain to a still greater extent the confidence not only of the Governments, but also of the great agricultural interests throughout the world.

(g) The Permanent Committee, either directly or through the delegates on the Permanent Committee, should, when special or consultative commissions of the Institute are appointed, take steps whereby the nomination of persons, who are not already members of the Permanent Committee, shall be made with the approval of the Governments respectively interested.

O. C. Stine.

Bureau of Agricultural Economics,
United States Department of Agriculture.

BOOK REVIEWS AND NOTICES

Marketing of Agricultural Products, by James E. Boyle. New York; McGraw-Hill Book Company, 1925. Pp. viii. +479. $3.50.

Some years ago when the attention of the public first was turned to the problems of marketing its food and the welfare of agriculture, there were many persons appearing as prophets to lead a stricken nation out of the wilderness. In most instances these persons knew nothing about the problems at hand. As a result, there grew up a body of misconceptions which came to be taken as truisms. There still are many persons who believe that the consumer and his desires are not important, the middleman is unnecessary, cost of production determines value, the government can legislate prosperity to the farmer, the whole problem of agricultural prosperity is something over which the individual farmer has no influence, and co-operative marketing in itself, without wise management and backing of proper productive activities, can bring the farmer into a state of bounteous prosperity.

A further refutation of these things should not be necessary; but so long as we still have people who are basing their economic reasonings upon such faulty foundations, the fundamental economics of the market must be presented as a means to such refutation. This Professor Boyle has done. He has taken up all of these misconceptions and disposed of them. Nor did he hesitate to get at the matter in hand. He begins his treatment with a discussion of consumer demand and its relation to marketing. This is followed up by emphasizing the influence of proper productive practices on price and the prosperity of agriculture. The consumer, according to Professor Boyle, is the most important party in the marketing process. Second to the consumer is the producer. The other party is the middleman, and the author of this book goes to considerable length in defending this much maligned party.

Only in recent years has the problem of the consumer been given much attention by the writers of marketing texts. It seems now that we are swinging into the "consumer demand cycle" of the development of a body of marketing principles. This emphasis, at this time, is very good because farmers and their leaders are too apt to leave this important party entirely out of consideration and to place more hope in governmental aid than in catering to the consumer's demand.

After disposing of the relationships of the consumer, the producer, and the middleman in the marketing process, the author takes up the usually discussed marketing functions. No one should quarrel with Professor Boyle because he discusses these marketing functions, even though they have been discussed many times before and in a much more concise and interesting manner. No text would be complete if it did not give the beginning student the functional approach to the problem of marketing. Professor Boyle is in his field while discussing "future trading," and his treatment of orderly marketing, pooling, and the surplus problem shows the influence of his close study of the grain trade. Closely connected with these problems is that of price. The author's conclusion that "price is the final great regulator" indicates that he places very little faith in the efficiency of price-fixing or monopoly to solve the farmer's problem.

A description of the methods of marketing the most important agricultural products is given. Professor Boyle understands the marketing of grain and gives a very good presentation of this. But one is tempted to come to the conclusion that he is not so familiar with the problems of the market for other products. It appears that the author has deemed it necessary to give a complete discussion of the marketing problems of all agricultural products and that he has based his discussion of some of these upon very scanty information. For example, a page and a half is devoted to a discussion of the milk marketing plans in Pittsburgh, Detroit, and Philadelphia. If such discussions of commodity marketing are justifiable, it is to give the student an understanding of the workings of the market. This is impossible in such a brief discussion. Also, one who is familiar with the actual con-

ditions of the market regrets that Professor Boyle, in discussing the Detroit market, states on page 329 that "the dealers now take only the whole milk needed for their trade. The farmers manufacture the surplus at their own plants in Adrian." The explanation of the method followed in the Detroit market is entirely inadequate and does not give sufficient facts to inform anyone about this market. This discussion of commodity marketing is the weak part of the book. It is impossible to give a beginning student the fundamentals of marketing and at the same time acquaint him with all the methods followed in getting the important farm products through the market channel. These problems must be taken up in subsequent courses. Illustrations can be taken from the grain, milk, tobacco, or other market to clarify principles; but the job of familiarizing students about the details of these markets is beyond the scope of a beginning course.

In the second part of the book Professor Boyle indicates how the individual, groups, and the government can and do aid in the improvement of marketing. The goal should be to give the farmer a higher net return. This is to be done through (1) better production, (2) savings in distribution, (3) better price through better quality and better distribution.

Better production is a task for the producer, and he should also learn of the problems of the market and give strict attention to market information. Through co-operative effort the farmer has been led to be too hopeful. The possibilities and limitations of co-operative marketing have been well presented. When one reads of these possibilities and limitations such as set forth in this book, he should realize that co-operation is still in the process of growth and it is impossible to predict very far ahead just what the value and possibilities of this movement will be. It might be that in the last analysis we shall find that it has been more of an educational than an economic force.

Such a book as this necessarily leads one into the whole agricultural problem. Professor Boyle may be right in considering that the big marketing problem before the people of this country is to give the individual farmer a higher net return. However, it is well not to forget that from a national standpoint the consumer cannot be neglected.

In discussing the agricultural problem we are often apt to consider the question of individual profit exclusively. There are methods of marketing products either by individual or co-operative effort which will bring a greater profit. Some marketing men consider the heart of the marketing problem bound up in methods and prefer to discuss marketing organizations, prices, costs of doing business, and spreads. Professor Boyle, in his presentation, has placed emphasis upon this phase only in relation to the farmer's business and in a general way in discussing other agencies. There is not brought out in relief the thought, which the student should get early, that efficiency, while essential from a national standpoint and requisite to profit under present competitive conditions, will not bring permanent prosperity to all farmers. What is wanted—a system of production and marketing which will bring prosperity to the best farmers, one which will bring prosperity to all farmers, or one which will be efficient from the standpoint of national welfare?

Marketing of Agricultural Products is a book which is a valuable addition to the literature of the subject. It is not to be deplored that another book has been added to the rapidly growing list. In this treatment some phases of the subject are presented in a new and most admirable manner. Certain parts of it are very easily read. However, one would suspect that the presence of such a mass of figures, percentages, and statistics in the text rather than in well arranged tables would dampen the enthusiasm of the student who was searching for the heart of the problem.

J. T. HORNER.

Michigan State College.

Farm Accountings—Principles and Problems, by K. F. Mc Murry and P. E. McNall. Chicago; A. W. Shaw Company, 1926. Pp. xiii+329. $3.00.

This book gives a very much needed alignment of the accepted accounting principles to the many and varied cost accounting problems of the farm. The methods of approaching and presenting the problems of farm accounting make the book

peculiarly suited to the classroom. It combines text and laboratory manual in such a manner that the procedure of accounting, as well as theory, is made clear.

The authors show their knowledge of the accounting problems peculiar to farming, and have at many points discussed the limitations of different methods which may be used in farm accounting. This flexibility in accounting procedure when applied to farming seems justified by the several uses to which the results secured through them may be put. It is probable at this point that a fuller analysis would be worth while. Aside from the desirability of keeping farm records for income tax purposes, accounting that will result in "increased net income to the operator" of the farm means a knowledge of the productive uses to which the results of this accounting may be put on the farm.

The use of price statistics and price curves to illuminate the discussion from time to time is helpful to the reader. The wide-spread application of the principles set forth in the book to differing types of farming and to ranching make it distinctive.

Farming units large enough to justify the labor and expense of going into the details outlined here would benefit by practicing the accounting procedure outlined. Farmers with an operating unit of any size, and particularly students in agriculture, will find this book of much value.

R. H. WILCOX.

University of Illinois.

Marketing of Agricultural Products, by Alva H. Benton. Chicago; A. W. Shaw Company, 1926. Pp. xviii + 427. $3.

"This book," in the words of the author, "gives the student beginning the study of marketing agricultural products, the farmer, and the interested business man a picture of what marketing is and how agricultural products are marketed, both under the old established private marketing system, and under the newer system, the producers' cooperative marketing organization." As such, it is chiefly

an up-to-date, descriptive discussion of how various types of marketing agencies are organized and what services they render. A good deal of space is devoted to the principal co-operative marketing associations and the factors affecting the success of co-operation—more space than the relative volume of business of such organization would warrant, although probably not more than is justified by public interest in the subject.

The commodity approach to marketing is followed, 15 of the 21 chapters being devoted to individual products or groups of products. Since marketing is organized by commodities and carried on by agencies that render combinations of services, this is the proper method to introduce marketing analysis to the beginner. On the other hand, the weakness of this approach becomes conspicuous in a short publication of only 360 printed pages, such as this one, since little more than descriptive material can necessarily be included for the 12 different commodities, or groups of commodities, discussed. Only occasional mention is therefore made of "the broad principles involved in marketing farm products" of which we are promised a discussion in the preface, and there is no discussion of such important marketing practices as pooling, financing, or sales policies.

Descriptive, factual material, it should be pointed out, has an important place in research and teaching. As previously mentioned, it is valuable as an introduction to the study of marketing. *Marketing of Farm Products* is well suited for this purpose by reason of its arrangement of materials, its clear, simple presentation, and illustrations. However, one can not expect such material to create much improvement in marketing efficiency or to effect a better understanding of the possibilities of marketing reorganization until it is analyzed in such a manner as to point out what constitutes economical and efficient organization of business units, on the one hand, or more orderly marketing and price functioning, on the other hand. This involves an analysis of factors affecting the efficiency of business set-up and market price processes. Only thus can the economic

principles of marketing be discovered. A satisfactory textbook with such an analysis of agricultural marketing has not yet been written.

H. BRUCE PRICE.

University of Minnesota.

Die Welt in Zahlen, by Wl. Woytinsky, Berlin; Rudolf Mosse, 1926.

This is the third of a series of seven books by the author and is devoted to agriculture. It comprises popular accounts of the results of research in all branches of statistics. The present volume and the two following, on industry and trade and commerce, respectively, are closely allied and to a large extent supplementary. In them the author does not attempt to deal exhaustively with economics as a whole, which he recognizes would be impossible. His aim is rather to trace the historical development of certain aspects of economic life up to the present time. In this book his division of the material is not geographical but according to the various branches of agriculture, and he points out to the reader that he does not paint a complete picture of agricultural conditions in individual countries.

The place of agriculture in the economic life of the various countries is the author's first theme. He distinguishes between the various branches of agriculture and briefly discusses their adoption and exploitation in different countries. Agricultural enterprises and conditions of land ownership and tenancy all over the world are next discussed, with references to recent agrarian reforms. Production statistics are given for food-producing plants, textile plants, livestock raising, forestry, hunting, and fishing, mostly for recent years, the figures for wheat and rye being the only ones going back to 1850. Finally, a chapter on agriculture and international trade links agriculture with commerce. Tables of import and export figures of agricultural products according to countries are given, mostly from 1905 to 1924. The world movement of prices of agricultural products in recent years is tabulated, as well as the annual and monthly

fluctuations of grain (wheat, rye, oats) prices from 1913 to 1925 in Winnipeg and Chicago.

A. M. HANNAY.

Bureau of Agricultural Economics.

American Villagers, by C. Luther Fry. New York; Geo. H. Doran, 1926. Pp. 201.

The discontent of rural populations at the present time is a well-known fact, and it is recognized among sociologists that it may be as serious a menace to the peace and prosperity of the nation as is the discontent of industrial wage earners. As a contribution towards the solution of the rural problem in the United States, the Institute of Social and Religious Research has made a field study of the economic, social, and religious conditions in 140 agricultural villages. The data collected will appear later. The present volume consists of an analytical study of the more important published and unpublished data relating to villages found in the files of the Census Bureau and elsewhere.

BULLETINS AND PERIODICALS

PREPARED BY MARY G. LACEY

Cost of Producing Hogs in Iowa and Illinois, Years 1921-1922 by Oscar Steanson and R. H. Wilcox, Federal Bureau of Agricultural Economics, United States Department of Agriculture, Department Bulletin No. 1381.

This study covers the cost of pigs from the date sows were sorted out to be bred until the pigs produced by them were disposed of. It therefore covers the period from the time sows were selected for breeding in the fall of 1920 well into the summer of 1923. Sections are devoted to the general economic conditions, the area studied, systems of hog production, methods of conducting the study, cost of producing pork, cost of maintaining the breeding herd, cost of fattening pigs for markets, and financial returns from the hog enterprise.

Index Numbers of Freight Rates and Their Relation to Agricultural Prices and Production, by Harry S. Gabriel, Cornell University Agricultural Experiment Station, Bulletin 446.

A statistical analysis of freight rates as a means of finding a more reliable method of computing actual transportation costs at different periods and also of computing the burden entailed for different industries or commodities.

Causes of Profit or Loss on Virginia Tobacco Farms by J. J. Vernon, Virginia Agricultural Experiment Station, and M. J. B. Ezekiel, Federal Bureau of Agricultural Economics, Virginia Agricultural Experiment Station, Bulletin 241.

Sections of the bulletin are devoted to the introduction describing the object of the study, the region, etc.; conditions the year of the survey; financial results the year of the survey; why some farmers made larger earnings than others; how farmers realize good returns from the tobacco enterprise; how farmers increase earnings by growing other things besides tobacco; a summary; and a statistical appendix. The year covered by the bulletin is from March 1, 1922, to March 1, 1923.

Service Institutions for Town and Country by J. H. Kolb, Wisconsin Agricultural Experiment Station, Research Bulletin 66.

Part I takes up service institutions related to rural standards of living. Part II takes up the high school; Part III, the library; Part IV, the hospital, and Part V, service institutions in a plan of community organization.

A Partial Correlation Analysis of Farm Organization and Management Data From Warren County, Iowa, by C. W. Crickman, Iowa Agricultural Experiment Station, Research Bulletin No. 89.

This is a technical report on one phase of the statistical analysis of data which were made the basis of Iowa Bulletin 229.

An Investigation of Cotton Growing in Texas Showing Influence on Cotton Production in South Carolina by D. W. Watkins, Assistant Director, Extension Service, Clemson Agricultural College Bulletin 75.

To get definite information on the development of cotton production west of the Mississippi so as to be able to determine its possible bearing on cotton production in South Carolina, Professor Watkins made a trip through Texas. This bulletin reports the results of his study.

Agricultural Production and Marketing in Lebanon County, by A. C. Berger, Extension Service Pennsylvania State College, P. R. Taylor, Pennsylvania Bureau of Markets, and B. H. Critchfield and R. S. Kifer, Federal Bureau of Agricultural Economics, Pennsylvania State College, Bulletin No. 198.

This report presents the results of a survey of agricultural conditions in Lebanon County, Pennsylvania, the bulletin states. The study was made for the purpose of furnishing an economic basis for a production and marketing program. The present markets for locally produced farm products were studied with a view of determining how consumer's requirements as to quality and quantity were being met. The requirements of other markets outside the county were considered as a possible outlet for Lebanon County products. Records were obtained from 163 farms which had been selected as representative of general farm conditions including production and marketing practices. These records were obtained for the period, July 1, 1923, to June 30, 1924.

A Study in Vermont Dairy Farming by John A. Hitchcock, Vermont Agricultural Experiment Station Bulletin 250.

The bulletin gives results of a two year study made by the Vermont Station in cooperation with the Federal Bureau of Agricultural Economics. The data were obtained by the survey methods and cover two towns. The bulletin takes up for the towns surveyed, the soil, population, economic development, tenure, farm profits, standards of living, economic organization, types of farming, potato growing, quality of livestock, labor, crop yields, investment, diversification and size of business.

NEWS NOTES

S. W. MENDUM, Editor

Among those who attend luncheons of the Farm Hands' Club of Washington, D. C., there are nearly 150 men who are members also of the American Farm Economic Association. J. Clyde Marquis is chairman and prime mover of this unique organization, which has thrived for six years on good fellowship and an interest in agriculture in all its aspects. The Club meets every Tuesday, rain or shine, at the Harrington Hotel, at 12:30 for lunch and for discussion. Since February 1, travelers from 19 states and five foreign countries have brought food for thought, as their contribution to the "regular fare" of Washington news and comment. Other members of the association are cordially invited to attend while they are in Washington.

Dr. Hector Macpherson, head of the Department of Economics and Sociology, Oregon Agricultural College, has resigned. During the 15 years in which Dr. Macpherson served as head, the department has grown until it is now one of the largest in the college. Dr. Milton M. Nelson, of Ohio, succeeds Dr. Macpherson.

The agricultural experiment station, Pullman, Washington, has taken up a study of opportunities for profitable adjustments of production in the Spokane Valley to meet present and prospective demands as a new project under the Purnell Act. The area to be studied is an irrigated district containing about 20,000 acres of tillable land near Spokane, a city of about 110,000 people. The organized farmers in the area asked the station to help them work out a safe and balanced agricultural program. The conditions of production and the market situation will both be covered. Professor George Severance is in charge of the study, assisted by Neil W. Johnson and B. R. Stauber.

Professor W. J. Spillman gave a course in advanced farm management at the summer school, Cornell University.

Dr. Harry S. Gabriel, formerly of Cornell University, has accepted a position as assistant professor of Agricultural Economics at the University of Delaware. He will carry on research work on the marketing of Delaware farm products.

Mr. H. R. Tolley has been appointed head of the Division of Farm Management and Costs, Bureau of Agricultural Economics, taking the place of M. L. Wilson, who returned to his work in Montana at the close of the fiscal year.

Mr. Warren C. Funk has been transferred to the United States Tariff Commission from the Bureau of Agricultural Economics.

Dr. Frederick A. Buechel, recently of the Texas A. & M. College, has begun a study of the marketing of live poultry in New York City, a new project of the Bureau of Agricultural Economics in co-operation with the New York Food Marketing Research Council.

Mr. H. I. Richards has been appointed Secretary of the New England Research Council, with headquarters in Boston, succeeding J. W. Tapp.

New appointments to the Division of Co-operative Marketing, Bureau of Agricultural Economics, include: John J. Scanlan, recently Assistant Professor of Rural Economics at Ohio State University; James W. Jones, recently Marketing Specialist at the University of Kentucky; H. M. Bain, transferred from the office of the Secretary of Agriculture; John F. Booth, formerly at Cornell University.

A division of co-operative marketing has been created in the Bureau of Agricultural Economics of the Department of Agriculture, pursuant to the provisions of the Co-operative Marketing bill which was approved and signed by the President just before Congress adjourned. Chris L. Christensen, who for the past two years has been at the head of the co-operative marketing work in the same bureau, will be in charge of the new division. The work and personnel

of the former Division of Agricultural Co-operation will be transferred to the new Division of Co-operative Marketing.

The research, educational, and service work relating to co-operative marketing will be considerably enlarged, the Department now being enabled to give the same attention to the development of co-operative marketing among farmers as has in the past been extended to problems of production.

Commodity co-operative marketing specialists familiar with the needs of co-operative organizations and with the research and service of the Department will form a special contact with 12,000 co-operatives. They will assist in the dissemination of crop and market information, data regarding price trends, and conditions of supply and demand, with such analyses and explanation as are necessary to make this information of practical value to the co-operatives and their members.

The act enables the Department to co-operate with educational agencies. It is part of the plan, therefore, to assist agricultural colleges and co-operative associations in working out a comprehensive educational program in co-operative marketing.

The College of Agriculture of the University of California is now offering an agricultural economics curriculum. The curriculum differs from those in most institutions in that it requires a smaller amount of technical agriculture than is usually required and gives particular stress to social and economic courses. Out of a total of 130 semester units of University work there are required 21 units in economics and a minimum of 15 units in agricultural economics. A minimum of 9 semester units is required in animal husbandry, agronomy, and pomology, although students are urged to take additional units in some one such field. The course is designed particularly for students who expect to engage in commercial activities having to do with agriculture.

Professor R. L. Adams was granted leave of absence from July to December, 1926, in order to reorganize the work of the California State Bureau of Markets, which had not been functioning for something over a year. He expects to return to the University in time for the work of the second semester.

Mr. David Weeks, of the Division of Agricultural Economics of the University of California, spent the summer months in Bolivia in order to make a careful study of certain areas in that country in which the Bolivian Government is planning to establish land settlements. Mr. Weeks will work out plans for carrying out the work if the projects are found feasible. He expects to return to California about December 1.

A division of Agricultural Economics has been established in the College of Agriculture, University of California, combining the work of the former divisions of Agriculture, Farm Management, Rural Institutions, and a small portion of the work of Agricultural Education. The change in no way alters the research or teaching work of the first three divisions, except that courses now offered are listed in the announcement of courses under one heading, namely, Agricultural Economics.

Dr. W. E. Garnett, of the new department of Rural Sociology, Virginia Agricultural College, has undertaken as the first research project, a series of studies of rural organizations in Virginia. The first unit in the series is a study of the attitudes of the people themselves toward organization problems and policies, together with the reasons for the prevailing attitudes. The field work for this unit is nearly completed.

Dr. E. A. Reynolds, of the new department of Home Economics, is completing a study of the relation of diet and nutrition to health.

The Virginia Agricultural Experiment Station recently distributed Bulletin No. 241, Causes of Profit or Loss on Virginia Tobacco Farms, and has in press a Bulletin on Renting Land in Virginia. Other economic projects of the Station include a detailed cost study, by E. L. Langsford, of beef cattle farms in southwest Virginia, and of dairy farming in the Shenandoah Valley of Virginia.

The initial number of "The Co-operative Marketing Journal" will appear in November as a monthly periodical of about 32 pages and cover, size 7 x 10 inches. A preliminary

announcement by the editors, Walton Peteet and Robin Hood, states: "Our aim is to assemble original studies and timely observations in the field of co-operative marketing. We propose to publish manuscripts that are a contribution to co-operative knowledge, are worth permanent preservation in a bound volume, are accurate and studious, but are interesting enough to be read by men who are directors, managers, field leaders, teachers or students of co-operation." Both editorial and business correspondence should be directed to Insurance Building, Fifteenth and "K" Streets N. W., Washington, D. C.

The Food Research Institute, which has heretofore concentrated its work largely on wheat and wheat products, has started similar intensive studies of vegetable oils and fats. This group of food commodities was selected chiefly because of its increasing importance in world consumption and trade and because of the limited attention which has been given to these products by students of food problems. At present, L. B. Zapoleon, Economist; Katharine Snodgrass, Research Associate; and Robert D. Calkins, Research Assistant, are working in this field under the direction of Dr. C. L. Alsberg.

Mr. M. K. Bennett has resumed his position as Junior Research Associate in the Food Research Institute, Stanford University, after a year of graduate study at Harvard.

Mr. Joseph G. Knapp, Instructor in Economics at Stanford University and sometime Research Fellow in the Food Research Institute, has been appointed Research Assistant in the Institute of Economics at Washington, D. C. He is completing a doctoral dissertation on "Co-operative Wheat Marketing in the Southwest."

Funds have been set aside under the Purnell appropriation for the employment of a full-time man to make a comprehensive study of taxation problems, especially as related to South Dakota. This will be an expansion of the project which has been started in a small way about a year ago.

Considerable progress is being made in securing prices paid to South Dakota farmers in the early years of the

state's history. Many diaries kept by farmers running back as far as the 80's or 90's have been turned in and are being tabulated under the direction of Mr. O. L. Dawson, a federal statistician. These are being developed as a basis for further studies of price relationships in the state.

Professor P. K. Whelpton, of Miami University, is conducting some studies in land and population problems in parts of South Dakota under the Scripps Foundation for Research in Population Problems.

In January, 1926, work was begun on a comparatively intensive study of the organization of sixty cattle ranches in northwestern South Dakota, southwestern North Dakota, southeastern Montana and northeastern Wyoming. Mr. M. B. Johnson is the field statistician on the project and has headquarters at Spearfish, South Dakota. This project is a joint one by the four states concerned and the Bureaus of Agricultural Economics and Animal Industry.

The second annual session of the American Institute of Co-operation was held at University Farm, St. Paul, from June 21 to July 17. Nearly 600 persons registered during the four weeks' session, and a highly profitable program was carried through. In conjunction with the summer session of the University of Minnesota, eleven graduate courses on various phases of co-operative marketing were offered by an unusually strong faculty group drawn from agricultural colleges in all parts of the country. Approximately 190 students took these courses for regular college credit, while several others attended for all or part of the session.

The Proceedings of the Institute will be published in a form similar to the volumes issued last year, and will probably be available about December 1. The Proceedings of last year were sold for $35.00 a set, but the price has now been reduced to $20.00. The Proceedings this year will likewise be priced at $20.00, and a small edition will be printed of the Proceedings of each week separately. These will sell at $6.00 per volume. Orders or inquiries should be addressed to Mr. Charles W. Holman, Secretary, 1731 Eye Street, Northwest, Washington, D. C.

TENTATIVE PROGRAM OF THE SEVENTEENTH ANNUAL MEETING OF THE AMERICAN FARM ECONOMIC ASSOCIATION

The American Farm Economic Association will hold its seventeenth annual meeting in St. Louis, December 28 to 30, inclusive. The American Economic Association and others of the social science group will meet at the same place and time. A tentative program of the Farm Economic Association meeting is presented below.

TUESDAY, DECEMBER 28

10:00 A. M.: Business meeting.

Agricultural Economics Curricula in Land Grant Colleges. O. G. Lloyd, Purdue University.

The Teaching Side of Agricultural Economics. F. A. Buechel, Bureau of Agricultural Economics, United States Department of Agriculture.

2:00 P. M.: Some Observations on the So-called Agricultural Ladder. G. H. Von Tungeln, Iowa State College.

The Agricultural Ladder as an Explanation of American Farm Tenure. G. S. Wehrwein, Institute for Research in Land Economics and Public Utilities.

8:00 P. M.: Presidential address. T. N. Carver, Harvard University.
Address. Honorable Frank O. Lowden.

WEDNESDAY, DECEMBER 29

10:00 A. M.: Cost of Production, Supply, and Demand. Henry Schultz, University of Chicago.

Paper (Title to be announced). Holbrook Working, Food Research Institute.

2:00 P. M.: Results of Census Tabulations of Cleveland County, Oklahoma. C. J. Bollinger.

8:00 P. M.: Joint session with American Economic Association and American Sociological Society.

THURSDAY, DECEMBER 30

10:00 A. M.: Some Long-time Effects of Co-operative Marketing. R. S. Vaile, University of Minnesota.

Cotton Futures Markets in Europe. A. B. Cox, University of Texas.

12:00 Noon.: Joint luncheon with Rural Sociology section of the American Sociological Society.

The Relation of Social and Economic Factors in Rural Progress. Dwight Sanderson, Cornell University.

Joint Co-operative Studies in the Economics and Sociology of Agriculture and Farm Life. E. L. Kirkpatrick, Bureau of Agricultural Economics, United States Department of Agriculture.

2:00 P. M.: Joint session with the American Economic Association.

The Outlook for Agriculture. E. G. Nourse, Institute of Economics.

8:00 P. M.: Reports of special committees with general discussion.